

DOCUMENT RESUME

ED 210 111

PS 012 551

AUTHOR Sanders, Eleonora, Ed.: And Others
TITLE For the Well-Being of Malaysian Children.
INSTITUTION University of Agriculture Malaysia, Serdang. Dept. of Home Technology.
PUB DATE 79
NOTE 126p.
EDRS PRICE MF01/PC06 Plus Postage.
DESCRIPTORS *Child Rearing; Children; Communicable Diseases; Disabilities; Disease Control; Foreign Countries; Guidelines; *Health Needs; Infants; Money Management; *Nutrition; *Parent Role; Preschool Education; Television Viewing
IDENTIFIERS *Malaysia

ABSTRACT

Intended for use by adult education teachers of all kinds, social workers, physicians, nurses, and parents, this publication contains 16 short papers concerning the well-being of Malaysian children in particular and of all children in general. Covered by the papers are issues such as responsible parenthood; the nutritional need and status of Malaysian children; malnutrition and mental development; the advantages of breastfeeding for both the baby and the mother; the syndromes of prolonged bottle nursing; and prevention of choking. Other topics include the causes of handicaps in children; common communicable childhood diseases and their prevention; the development of a preschool curriculum to develop physical, intellectual, spiritual, and educational abilities; television and its effects on children; factors influencing consumer behavior of children; money management education for children; and the danger of death from clothing burns. A glossary of terms used in the papers is provided. (MF)

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Department of Home Technology
Faculty of Agriculture

DEC 10 1981



International Year of the Child

**FOR THE WELL-BEING
OF MALAYSIAN CHILDREN**

Editing Committee,

**Eleonora Sanders
Mary Tay
Zaitun Yassin**

**Published by
Department of Home Technology
Universiti Pertanian Malaysia
Serdang, Selangor
Malaysia 1979**

PS 012551

PREFACE

These articles were written by contributors in the Department of Home Technology, University of Agriculture Malaysia in an attempt to emphasize their philosophy and concerns for the children of Malaysia and of the world. The target readers are adult-education teachers of all kinds - extensionists, social workers, physicians, nurses, etc. and parents.

Each contributor wrote within the context of her special field in Home Technology, namely, Food and Nutrition; Home Management and Housing; Clothing and Textiles; Human Development and Family Studies.

It is hoped that these short papers with references will spark interest in the development of discussions and improved practices in the various areas.

The authors believe that it is the right of every child of every race, colour or creed to be loved and respected in a safe environment by responsible adults who strive to help the child develop intellectually, physically, emotionally, and morally to the highest of his/her potential. To this philosophy we dedicate our efforts.

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INTRODUCTION

Malaysia in 1979 - (The International Year of the Child) - is considered a "developing country" with much planning being done to improve the economic, social, educational and health status of citizens, while, at the same time, striving to preserve cultural heritages and moral values. Malaysia is experiencing the "costs of development" in terms of (1) population movement to already overcrowded towns and cities, with all of the accompanying problems, (2) increased unemployment, (3) increase in accidents, especially those with vehicles, (4) increase in drug abuse, (5) increase in heart attacks, hypertension, overweight and lung cancer, (6) soil erosion, (7) water and air pollution, (8) increase in venereal diseases, crime, etc.

The "costs of underdevelopment" were (and are) (1) dreaded communicable diseases, such as small pox, cholera, yellow fever, malaria, bubonic plague, tuberculosis, leprosy, (2) ignorance and little education for the masses, (3) poverty, (4) exploitation by foreign powers, (5) isolation and in-breeding, (6) malnutrition, etc.

Our children are not exempt from paying the costs. In fact, they are the brunt, the stated reason for "development" and, yet, the most vulnerable to suffering. During the so-called "developing period of a country", what is happening to the approximately four million children** of Malaysia? There are special dangers and concern for each age as they live in an environment that is changing so rapidly that even older brothers and sisters have not experienced some of the new sources of nurture, on the one hand, or the new traumas, on the other. Parents and communities have difficulty in understanding their children's action and attitudes when, "It was not this way when I was young!"

As a professional group concerned about continually improving the quality of life of everyone in this changing world, we ask such questions as:

(1) How are citizens influencing and supporting legislation, organizations, families and individuals to protect values that will lead to optimal quality of everyday living for everyone?

(2) Is the government, education and religion giving positive and practical support to children and their teachers as they strive to choose values appropriate to the "new life"?

(3) Are there "gaps" in our thinking about children? That is, are we as concerned about the teenager who is already working and independent from his family as we are about the infant in the home? Are we turning away from the handicapped, the abused, the orphaned, the refugees, the children of unwed mothers, the children in urban slums and poverty stricken rural areas -- all those who may need love the most and yet who are the most difficult to love?

(4) What can WE, you and I, do to help - not only today, but for the future?

The Editing Committee,
Eleonora Sanders
Mary Tay
Zaitun Yassin.

**Children - those conceived and who live through 21 years of age.

TABLE OF CONTENTS

	Page
PREFACE	ii
CONTRIBUTORS HOME TECHNOLOGY DEPARTMENT 1979	iii
INTRODUCTION	iv
RESPONSIBLE PARENTHOOD	1
Mary Tay	
NUTRITIONAL NEEDS AND STATUS OF MALAYSIAN CHILDREN...	7
Nafsiah Omar	
MALNUTRITION AND MENTAL DEVELOPMENT	28
G.L.Khor	
WHY YOU SHOULD BREASTFEED YOUR BABY	36
Zaitun Yassin	
"NURSING BOTTLE" SYNDROME	41
Zaitun Yassin	
DOES YOUR CHILD HAVE A SWEET TOOTH?.....	46
G.L. Khor	
WHEN A CHILD CHOKES	49
Eleonora Sanders	
THE HANDICAPPED CHILD	53
Mary Tay	
"DON'T WORRY! HE WILL OUTGROW IT"	59
Eleonora Sanders	
COMMON CHILDHOOD COMMUNICABLE DISEASES AND THEIR PREVENTION	62
M.C.V. Idris	
OUR HOME: THE PLACE OUR CHILDREN GROW UP	71
Choa Kwok Kuan	

	Page
A LOOK AT PRESCHOOLS	78
Fauziah Halimah Rahid	
TELEVISION AND ITS EFFECTS ON CHILDREN	88
Hasnah Udin	
FACTORS INFLUENCING CONSUMER BEHAVIOUR OF CHILDREN	94
Halimah Hj. Ahmad	
MONEY MANAGEMENT EDUCATION FOR CHILDREN	102
Husna Sulaiman	
DEATH FROM CLOTHING BURNS	109
Hamidah Ahmad	
GLOSSARY OF TERMS – WORDS MARKED WITH AN (*) WILL BE FOUND HERE	113

RESPONSIBLE PARENTHOOD

Mary Tay

In Malaysia, as in many parts of the world, "Parenthood" is welcomed with a host of positive adjectives. Good luck, happiness, fortunate, etc. to name a few. It is almost expected that soon after marriage a couple should have a child "to make the family unit complete". Children are seen as a future source of help and support. In some cultures it means that a couple will have somebody to take care of them in their old age both financially and physically. Children can also be a source of family labour on farms and businesses. In Hindu and Chinese families sons have to perform certain funeral rites. Some men also view the birth of their children as proof of their masculinity and women, their femininity.

Responsible parenthood calls for careful planning before potential parents take on this all important role. We should not assume that as long as a couple is old enough to be married they are capable of bringing up children. Some couples may very well be. In extended families, they can depend on the guidance of relatives. It is unfortunate that in Malaysia, as in many developing countries, the extended family is breaking down and making way for conjugal and nuclear families where such support is very lacking.

Contraceptive technology has transformed the role of parenthood to one of choice rather than an unavoidable and eventual product of marriage. It cannot be assumed that biological capability is the only prerequisite to being a parent. Parenthood itself can only be complete with the presence of a child. It is not hard for us to sweep aside children's rights during the first few years of their lives because it is almost impossible for them to call our attention to them, let alone demand them. The International Year of the Child provides an opportunity for us to look closely at the role of parenthood from the standpoint of the child to be born as well as that of the parents and hopefully, to

strike a good balance between the two. The child that is to be born has certain rights. Gordon and Wollin (1975) have listed the following as rights of children:

- To be wanted and planned for by the parents
- To be reared by parents who have been trained in the skills of parenting.
- To be provided with the best possible environment in which to grow and develop in the uterus of the mother (This refers to the period between conception and the actual birth).
- To be provided with the proper nutrition (This applies also to the nutrition of the mother during the period of pregnancy).
- To be protected against injuries to the extent that they can be prevented by reasonable care and foresight.
- To live in an uncrowded, peaceful, clean, secure home.
- To have clean clothing, suitably adapted to the weather and adequate sanitary facilities.
- To receive warm patient and skillful care by parents.
- To receive a large number and variety of learning experiences, including opportunities to explore the environment within reasonable limits.
- To be protected against abuse and neglect. If parents cannot or will not meet reasonable standards in this respect, then the agencies of society must step in to do whatever is necessary to correct the mistreatment.
- To receive good medical care.
- To attend a good school at the proper age and to receive instruction and motivation that, together with other life experiences, will help each individual to develop to the limits of his or her native capacities.

This bill of rights calls for planned parenthood so that parenthood will not be an experience that is forced nor will it be taken as a "matter of fact" but rather as an experience that is welcomed. In planning for a child, a couple must first want the child. Physical readiness is a very obvious prerequisite. A girl is not ready to be a mother if her body is still immature. The ideal age for child bearing, as determined by infant mortality rates, is between the ages of twenty and twenty-four although nineteen to thirty-five years is adequate. Infants born to adolescent mothers are markedly prone to low birth weight, congenital defects, blindness and mental retardation. Unfortunately, thirteen million births result from adolescent pregnancy each year.

Too short a birth interval between children is also a hazard for both the mother and child. It has been determined in several studies that too short a birth interval (less than two years) increases the risk of infant mortality, premature births and malnutrition. Short birth intervals also affect the physical and mental development of the child (Grant, 1964; Holley, 1969; Douglas, 1968). Mothers can develop "maternal depletion syndrome" which contributes to low infant birth weight, poor performance in lactation and ultimately leads to premature aging and even early deaths of mothers as is often seen in developing countries. Too long an interval between births has been shown to lead to toxemia of pregnancy (Eastman, 1940). Physical readiness also includes being in good health. It is recognized that certain congenital disorders are transmitted to offspring. If the risk is too high, should parents take the chance? Should they look to adoption as an alternative? It is a very difficult situation but one which parents need to consider very seriously.

Emotional readiness includes a host of less tangible factors. Most important is the willingness on the part of parents to share their lives, home, energy, time, worldly possessions including income, and above all, their love with a third, or fourth or even a seventh or eighth person. Parenting brings to parents some of life's greatest joys, such as the security of having somebody to take care of them in their old age, pride in baby's development, less boredom, close

relationship with relatives, appreciation of family and religious traditions, closer relationship with spouse, fun playing with baby, and a purpose in life (Russel, Candyce, 1974). Worries, on the other hand, include finance, less time to oneself, complications of relationships, permanency of the relationship, less freedom and more housework. It should also be noted that at different stages of growth and development of both the child and parents, the joys may overshadow the worries or vice versa. In one study, the term of pregnancy and children's adolescence were seen as the times with fewest advantages and the greatest number of disadvantages (Smart & Smart, 1976). In times when the worries become a burden to the parents, it is often a lasting commitment, sacrifice and love that carry them through. This commitment will become easier when parents are *willing* to share their entire life with their children.

Sacrifices have to be made on the part of both parents. Parents will find that all available resources have to be redistributed. Planning for a child or children has the added advantage of giving parents an opportunity to look into the redistribution of resources so that crises caused by a lack of resources can be prevented. The most commonly problematic resource is money. Money is needed to buy space, furniture, equipment and clothing for the child. Parents may also face, a) the problem of deprivation of income when one parent stops working, or in some cases, b) the added expense of paying for someone to care for the child when both parents are away at work. Long term planning is also needed if the child is to be given tertiary education.

Parents should also examine why they want a child. A child can be seen as a product of a love shared by two people who are very special to each other. Sometimes we hear of parents who want a child in order to "save a marriage". What a burden for an innocent five pounder or six pounder to bear from the time of its conception! It is unfair to the child, and although in some cases the arrival of the child has worked towards saving a marriage, in most cases it only signals the arrival of a host of other factors that bring discord to a marriage.

Education for human beings is a life long process and learning about child rearing should be treated as such. Responsible parents should not just rely on past experiences (as a child) to bring up their children. They must bear in mind that times have changed and that development makes the world they were brought up in different from that of their children. Parents, especially those who are literate, should take a keen interest in reading materials and books on the subject of child care and training. Optimum physical and emotional development of a child requires careful nurturing from mature parents.

How many children should a couple have? In Malaysia, there seems to be a slight decline in the number of children in a family. Sometimes couples have a second or a third or fourth one to please one another or even the existing children. At times "accidents" or contraceptive failures lead to more children. It is important to take into consideration the fact that the number decided upon by a couple should be one that is jointly decided upon and as such the welfare of all parties (including that of the child) are given due consideration. The addition of any one child can alter family relationships and patterns. Ideally, plans for each conception require evaluation of the whole family situation at that particular time. It is important to point out some of the major myths about the single child: that they are spoiled, selfish, and lonely or that parents are selfish in not providing a playmate for their only child. Research has shown that there are advantages as well as disadvantages to each position in the family (Smart & Smart, 1976). It is doubtful whether the advantages of giving a playmate to a child by having a second or third child can outweigh the cost to the family who do not really want another child or do not have adequate financial resources for the new addition to the family.

Society owes the unborn child the right to be born only to parents who want him/her. Society should not look unfavourably at couples who choose to be childless or to have just one or two children. Parenthood is an individual choice and who knows better than the couple themselves.

While it is ideal to talk of planning for a wanted child, let us not forget the number of children who are born each year who are not necessarily planned for. They also deserve the right to have the best that their parents can give. In some cases, community organisations must assist parents in providing the physical and emotional needs of the children. In Malaysia, the Welfare Department is often seen as the main source of aid. However, local religious and community organisations are also taking a keen interest in this all important role. After all, the prerequisite of a responsible citizen is a well nurtured upbringing.

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NUTRITIONAL NEEDS AND STATUS OF MALAYSIAN CHILDREN

Nafsiah Omar

In discussing the nutritional needs of the child, it is important to bear in mind that childhood is a period of active growth and development. The periods of active growth and development are during the first year of life followed by a decline in growth through the second and third year, and at the time of puberty - for girls, between the ages of 10 to 15 years and for the boys, 12 to 17 years. The nutritional needs vary according to the growth pattern of the child.

The nutritional needs of the Malaysian child are given in table 1. It is observed that the energy requirement per Kg. body weight is higher than that of adults. Their need for proteins, vitamins and minerals are proportionately higher than for adults. According to the suggested daily dietary intake for Malaysians, the energy requirement for infants is about 112 Calories per Kg. body weight. The energy requirement for children increases from 1,300 Calories at the age of one to 2,200 Calories by the age of nine. Energy requirement for boys and girls begins to differ from the age of ten where the former require about 2,600 Calories. This increases to 2,700 Calories by the age of 19, while the latter require only 2,300 Calories and decreases to 2,100 Calories by the same age. Adult women of childbearing age require about 2,000 Calories but this is increased by 350 Calories during pregnancy and 550 Calories during lactation.

Infant protein requirement is between 1.4 to 2.4 gm. per day per Kg. body weight. Children's requirement for protein increases from 23 gm. at the age of one to 35 gm. at the age of nine. From the age of ten, there is a sex-difference in the requirement for protein. Boys require about 43 gm. and this increases to 54 gm. at the age of 19 while girls require about 41 gm. at the

age of 10, reaching the peak of 45 gm. at the age of 15 and then decreases to 43 gm. at the age of 19. Protein requirement for adult women remains constant at 41 gm. for all ages but increases to 54 gm. during pregnancy and 65 gm. during lactation.

Infants' daily requirement for calcium is 100 mg. more than that of the requirement of children between the age of one to nine which is 450 mg. There is no sex difference in the requirement of calcium. Boys and girls between the ages of 10 to 15 require the same amount of calcium that is 650 mg. However, their need drops to 500 mg. for the 16 to 19 age group. Adult women require 450 mg. of calcium and their need increases during pregnancy and lactation to 1,200 mg. per day.

Children and infants seem to require the same amount of iron which is about 10 mg. per day. From the ages of 13 through 15 years there is a difference in the requirement for iron between girls and boys. The boys require 18 mg. per day whereas the girls need an additional 6 mg. making the requirement 24 mg. per day. Women of childbearing ages require about 28 mg. of iron per day.

With respect to daily requirement for vitamin A, infants need 300 mcg. The amount needed increases with age except at one year, 250 mcg. is needed. This increases to 400 mcg. at age nine. Boys and girls of ages 10 to 15 require between 575 to 725 mcg. Older boys and girls of ages 16 to 19 require 750 mcg. Nursing mothers require 1,200 mcg. per day during the first six months of lactation.

The need for the B vitamins increases with age. There is also a sex difference in the requirement. Boys require more of the B vitamins. Ascorbic acid or vitamin C requirement at infancy is 20 mg. per day. From age of 13, the requirement is similar to that of adults, that is 30 mg.

Meeting The Nutritional Needs

Food is what the child eats and nutrition is how the body uses food. What the child eats affects the way he grows and develops. Food can also affect the length and quality of his life.

Table 2 gives the daily allowances for children and for pregnant and nursing women in practical terms.

Unborn Child

The nutrition of the child begins at the time of conception. Nutrients for the unborn child's growth and development come from the mother. The mother who reaches child-bearing age well-nourished, and who maintains a good diet during pregnancy is likely to have a healthy baby. A daily diet during pregnancy should include at least four servings (! serving = 1 matchbox) of meat, fish or poultry, at least one egg, one glass milk, four servings or more of fruits and vegetables, which should be good sources of iron, vitamins A and C; four servings of rice and other energy giving foods and half serving ($\frac{1}{2}$ cup) root vegetable. It may be necessary to supplement the diet with iron and folic acid as it may be difficult to get all the iron and folic acid through food alone.

The Infant

Good nutrition during infancy is readily assumed when the baby is breast fed. When a baby is breast fed his nutrition is closely linked to that of his mother. It is important that the diet of the mother be adequate in all respects during pregnancy as well as throughout the nursing period.

Human milk is tailor-made for the needs of the baby. When the mother's supply is adequate and the baby nurses to satisfaction at appropriate intervals, he will in most cases, automatically be provided with adequate amounts of

all the essential nutrients during the first few months of life. Exceptions are vitamin D and iron. However, under normal conditions the baby has an iron storage that can last for the first six months of his life.

If, for any reasons the baby cannot be breast fed, the baby can be bottle-fed. There are a number of commercially prepared infant formulas together with evaporated milk and full-cream powdered milk on the market. The choice of formula must be made with care. It is also essential to observe absolute cleanliness and basic hygiene in preparing the bottle for feeding.

Solid foods such as cereal, strained vegetables and fruits should be added to his diet between one to three months of age. Gradually other foods, such as egg yolk, strained fish and meat should be introduced. The introduction of new flavours and textures will help him build good food habits. By the time the baby is about seven to nine months old, he will be able to eat foods of coarser consistency. He will be well on to a three meal a day pattern with mid-morning and mid-afternoon snacks.

The Preschool Child

Although growth during the second and third year of life is less rapid than the first year, the child still needs food for growth and energy. It is observed that the slower growth rate tends to lessen appetite. The food habits developed in early infancy could be carried over into early childhood. The food eaten during childhood should be similar to that during infancy except that the food need not be strained or chopped, and the servings be increased.

The Toddler and Teenager

The character of the diet of the toddler and the teenager remains essentially the same as for the preschool, but quantities are increased. The varieties of foods, meats, poultry, fish, cereals, fruits and vegetables, are practically

limitless. The diet introduced in early childhood can be continued into adulthood. Only the amounts and forms are modified to meet the varying requirements.

The nutritional needs of the Malaysian child can be met if a variety of different types of foods are used in designing their diets.

Food Availability in Malaysia

Malaysia is fortunate in terms of food availability. According to the Food Balance Sheet** for 1970, (Table 3 and Table 4), the availability of Calories is approximately 2,200 and protein 53 gm. per person per day. This is in excess of the Malaysian national per capita requirements per day of 2,070 Calories and 43 gm. of protein adjusted to the age and sex structure of the 1970 population (Nicol, 1975). Thus, the most recent food balance sheet shows a positive balance of supplies over requirements.

Nutritional Status

The infant mortality rate** (IMR) and the toddler mortality rate** (TMR) of a country have been widely recognised as an index of malnutrition.

The TMR for Malaysia is 3.37. This is well below that of most developing countries which often have a TMR of 10. However there is room for improvement as the TMR for a developed country is 1.

** Food Balance Sheet	indicate the national food supply and is used to estimate the availability of nutrients, Calorie and protein per head of population.
** Infant Mortality Rate (IMR)	Number of deaths of children 0-12 months per thousand live births.
** Toddler Mortality Rate (TMR)	Number of deaths of children 1-5 years per thousand live births.

The IMR and TMR for Peninsular Malaysia are shown in Table 5 and 6. It can be seen that both the infant and toddler mortality rate have improved considerably over the past years. However, a number of facts need to be highlighted. Comparing the three ethnic groups, the Malays and Indians who are predominantly rural, have IMRS much higher than that of the Chinese, who are predominantly urban. The IMR of Malays is higher in all the states. The IMR for the East Coast States is also higher than the IMR of the West Coast States. The IMR of the Indians is higher than the national IMR in the states of Pahang, Kedah, Malacca, Johore, Penang, Perak and Perlis. The IMR for the Chinese falls below the national IMR, except in Kelantan where it is slightly above the national IMR.

The toddler mortality rate (TMR) presents a similar picture to that of the IMR. In states that have a proportionately larger urban population, like Selangor, Malacca and Penang, the TMR for Malays is lower than that of the national figure which is 3.37. However, in other states, especially the East Coast States the TMR for Malays is much higher than that of the national figure. There are also areas that have exceptionally high TMR. For example in Ulu Trengganu, the TMR is 11.14.

The Indians are found to have a similar situation as that of the Malays, except in the state of Kelantan where the TMR is well below that of the national figure. The reasons could be due to the fact that the Indians in Kelantan are mostly found in urban areas. Among the three races, it is found that the TMR for the Chinese is well below that of the national figure.

Nutritional Problems

The Institute for Medical Research, Kuala Lumpur, has done a number of studies on selected samples of the Malaysian population. The findings indicate that the main problems of nutrition are Protein-Calorie Malnutrition (PCM), and deficiencies in Vitamin A, Vitamin B Complex (Thiamin and riboflavin), Iron and Iodine. PCM is a term referring to a pathological condition observed in children due to the simultaneous lack of protein and calories in the diet. There is a wide

spectrum of PCM which ranges from simple growth retardation to the obvious changes seen in children with kwashiorkor and marasmus. Currently, the classification of PCM is based on measures proposed by the Wellcome Trust Party.** The term marasmus is applied to children whose weight is less than 60 per cent of the expected weight for age of the Harvard Standard with no oedema* while the diagnosis of marasmic kwashiorkor would apply to those whose weight is less than 60 per cent of expected weight-for-age.

Children falling into this weight category, but without oedema, are classified as underweight. Using the Wellcome Trust Party classification, Chong and Lim (1975) found evidence of moderate PCM (between 60 to 70 per cent of expected weight-for-age) as indicated by simple growth retardation. The prevalence of moderate PCM varies from zero per cent among children of the upper income group in Kuala Lumpur to 32 per cent among children in Ulu Trengganu (see Table 7).

Based on the same sample, only two children were found suffering from kwashiorkor. However, the prevalence of marasmus and other forms of severe PCM varied from between 0 to 4.3 per cent (see Table 8). Ariemia due to iron deficiency is quite widespread in Malaysia. During the years 1969 - 1975 the Institute for Medical Research conducted surveys to determine the prevalence of anemia in preschool children. The results are tabulated in Table 9. It shows that a high proportion of rural preschool children had anemia. Among Indian children living on plantations, 61 per cent of the boys and 64 percent of the girls had anemia. Kandiah and Lim (1977) in a survey of an estate in Selangor, reported a high prevalence of anemia among; a) preschool children, (47.4%) b) school children (47.2%) and c) adult females (68.6%).

** The Wellcome Trust sponsored a meeting of researchers in infantile malnutrition in January 1964 in Jamaica.

* See Glossary of Terms

It was also observed that a high percentage of school children between the ages of seven to eight in Kuala Langat, Selangor, had *angular stomatitis** indicative of riboflavin deficiency (Lim, 1972 unpublished observation).

Vitamin A deficiency is often associated with a diet low in protein. Children with low levels of serum retinol represent a very vulnerable group in terms of health. Low vitamin A coupled with a diet low in protein can cause serious lesions of the eye leading to blindness. Chandrasekharan (1975), by serum retinol concentration determination, found that in Ulu Trengganu as high as 75 per cent of children have vitamin A deficiency. In 1969, it is reported that in the General Hospital of Kuala Lumpur 11 children had clinical signs of vitamin A deficiency (Chong, et al 1972). Ng et al (1977) reported that 32 per cent of preschool children in a Malay and Indian rural community had serum vitamin A levels that are regarded as "at risk", while 16 per cent Malay and 27 per cent Indian school children are in a similar state of hypovitaminosis A. These studies indicate the prevalence of a serious vitamin A problem among young rural Malaysian.

Goitre, which is generally due to low dietary intake of iodine, is still prevalent among some groups of the population. Polunin (1970) reported that for a 12 month period there were 206 thyroidectomies done in government hospitals in West Malaysia. A high incidence of visible goitres were reported among Indian girls (10 to 14 years) as shown in Table 10. The relatively low incidence among Malay and Chinese girls are probably due to a diet proportionately higher in sea foods.

From the studies, it is apparent that there are several forms of malnutrition among the children in Malaysia. There is no doubt that malnutrition is the result of many contributing factors, ranging from unequal distribution of food, poverty, ignorance of food values and physiological needs, poor food habits to intestinal and parasitic infections. These factors may act independently or in interaction with one another.

Demographically, Malaysia has a young population with high fertility. This has significant nutritional implications because children under five and women of child-bearing age, especially pregnant and nursing mothers, are considered the most nutritionally vulnerable groups. In addition, the child dependency ratio, that is, the ratio of the number of children under 15 years to the number of people aged between 15 to 65 years has nutritional significance. A higher ratio (0.76 in 1974) indicates the burden placed on the working population for provisions of food, education, health, and other social amenities for those below 15 years.

Unequal distribution of income is an important cause of poor nutrition. Most of the vulnerable children live in the rural areas, and in the urban slums. Poverty means inability to buy adequate food, lack of proper food storage and preparation facilities. Thus poverty creates a vicious circle of poverty - inadequate diet - malnutrition - illness - inability to work - poverty.

Ignorance or lack of education about nutrition and food values is another factor leading to poor nutrition. Knowledge about the nutritive value of foods and the increased requirement during different stress periods, especially for infants, toddlers, and pregnant and nursing mothers is absent. Diets of pregnant mothers often remain unchanged during the entire nine-month period, resulting in several deficiencies in the mother's nutritional status as well as that of the unborn child (Wilson 1973). For example, the problem of anemia or lack of iron is commonly found among pregnant and nursing mothers and newly born babies.

In addition, due to lack of knowledge about nutritional needs, infants are usually breastfed on demand and supplemented with sweetened condensed milk, rice gruel or mashed banana from as early as the first month. These supplements contain mostly carbohydrates with very little protein, thus contributing to the problem of protein deficiencies even at this early age. Improper weaning practices can hasten the onset of malnutrition. From the rice gruel and mashed

banana diet of the infant, toddlers are often given some rice with soy sauce and a little fish, an equally deficient diet (author's observation).

Beside being unable to get enough (good quality) food, lack of appropriate facilities and skills in food preparation may further deprive the ignorant and poor families of whatever nutrients are available from their daily diet. For instance, prolonged cooking of green vegetable, a practice common among rural Malay families, tends to destroy valuable nutrients, especially, Vitamin B complex and Vitamin C.

Social customs and taboos, religious beliefs, superstitions and food habits may further limit the food intake. For example, in traditional Malay families, fathers and other males are usually served first and given the best share of food. Hence, in a poor family where food is always scarce, women and children tend to get less than they need. In addition, religious prohibitions may restrict the quality and quantity of food available to the community. For example, the Muslims are not permitted to consume pork; other animal meats are permitted provided it is slaughtered according to Muslim rites. The Hindus are forbidden to eat beef and there are Buddhists who confine themselves to strictly vegetarian diets. Rigid dietary restrictions are commonly imposed on post-partum mothers, (Wilson 1973). During the 'confinement period' (the first 44 days following delivery), the diet for Malay mothers usually includes a plate of rice, a piece of salted fish and pepper. Foods that are regarded as 'cooling' (Mac Arthur, 1962) such as fruits and vegetables are prohibited as they are believed to cause bleeding, stomach disorders and fever.

The influence of traditional food practices and habits, especially in the rural areas, may also result in nutritional deficiencies. Limited consumption of fruits and vegetables among toddlers and preschool children may have harmful effects. Protein is sparingly given to children due to the belief that fish can transmit worms and skin infections (Chen 1970). 'Cooling' food such as papaya, banana, sweet potato, spinach, mustard green, cassava shoots, guava and pumpkin are believed to cause worms which migrate to the eyes to cause nightblindness.

Therefore, children suffering from nightblindness are prohibited from eating these 'cooling' foods. Ironically, all these foods are very cheap and rich sources of Vitamin A, the deficiency of which causes nightblindness. Rice is the staple food for Malaysians. Indeed, it is considered more than a food since it is believed to be the essence of life and has many cultural and psychological significances attached to it. It is usually consumed in large amounts with little "lauk" (side dishes) such as meat, fish, chicken and vegetables. This results in larger intake of carbohydrates foods which tend to fulfill mainly energy requirements.

Besides the above dietary factors, infections and parasitic diseases may also exert a profound influence on the nutritional status. Infections cause decreased food intake due to reduced appetite and withdrawal from solid foods. If diarrhoea occurs, there is decreased absorption and increased losses of nutrients through excretion which in turn lead to increased vulnerability to other infections.

The rural-urban migration is another factor found to have indirect influence on the nutritional status of the child. Jelliffe et al, (1970) described the flood of rural dwellers to the cities occurring throughout the world as "disurbanisation". The influx is too rapid to accommodate people in terms of employment, housing, food and services. As a result, squatter areas, shanty towns and unhealthy environments have mushroomed in many cities. These conditions are worse than the rural areas that they left behind. A larger proportion of their income has to be spent on non-food items and what is worse, all food items have to be bought with a restricted family budget (personal communication with Ruth Lim). Migration to the cities and the consequent change in lifestyle deprive the rural migrants of cheap and readily available sources of vitamins and minerals from local fruits and vegetable shoots such as "pucuk paku", "kangkong" and "cemperai" which are usually available in the village surrounding. This rural-urban migration has detrimental effect on the diet of infants and children. Infants

are often weaned early, so as to enable mothers to seek employment to supplement the family income. The alternative food provided is usually insufficient in quantity, and often poor in quality and likely to be grossly contaminated. The unhygienic and unsanitary living environment also provide excellent breeding places for disease-carrying vectors like mosquitoes, flies and rats, which cause various infections and parasitic diseases - thus further aggravating the nutritional status of those children.

Since the contributing factors to the nutritional problems are multifaceted an integrated approach is required to ameliorate the problems. The pilot applied nutrition project (ANP) was launched in 1969 in Kuala Langat, Selangor. The ANP is a project designed to improve the wellbeing of the population, with simultaneous increase in production of local foods, provision of education and training in nutrition and home economics, improvement in the health status of the community and environmental sanitation, and provision of supplementary foods to the less privileged pregnant and nursing mothers, infants, toddlers and school children. The Ministeries of Health, education, agriculture and rural development are entrusted to implement the ANP project.

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TABLE 1: SUGGESTED DAILY DIETARY INTAKE FOR MALAYSIA¹⁾

	Age (Years)	Weight Kg.	Energy		Protein ³⁾ NPU=70 gm.	Cal- cium. mg.	Iron ⁴⁾ mg.	Vitamin A Activity mcg. ⁵⁾	Vitamin D mcg.	Thia- min. mg.	Ribo- flavin. mg.	Niacin Equiv. mg.	Folic acid. mcg.	Vit. B ₁₂ mcg.	Ascorbic acid. mg.
			Kilo calories	MJ ²⁾											
Infants	0 - 1		112 per Kg.	0.47 per Kg.	2.4 - 1.4 per Kg.	550	10	300	10.0	0.4	0.6	6.6	50	0.3	20
Children	1 - 3		1300	5.4	23	450	10	250	10.0	0.5	0.8	9.0	100	0.9	20
	4 - 6		1800	7.5	29	450	10	300	10.0	0.7	1.1	12.1	100	1.5	20
	7 - 9		2200	9.2	35	450	10	400	2.5	0.9	1.3	14.5	100	1.5	20
Boys	10 - 12		2600	10.9	43	650	10	575	2.5	1.0	1.6	17.2	100	2.0	20
	13 - 15		2800	11.7	53	650	18	725	2.5	1.1	1.7	18.5	200	2.0	30
	16 - 19		2700	11.3	54	500	18	750	2.5	1.1	1.6	17.8	200	2.0	30
Girls	10 - 12		2300	9.6	41	650	10	575	2.5	0.9	1.4	15.2	100	2.0	20
	13 - 15		2400	10.0	45	650	24	725	2.5	1.0	1.4	15.8	200	2.0	30
	16 - 19		2100	8.7	43	500	24	750	2.5	0.8	1.3	13.9	200	2.0	30
Adult Men (Moderately active)	20 - 39	55	2500	10.5	53	450	9	750	2.5	1.0	1.5	16.5	200	2.0	30
	40 - 49	55	2400	10.0	53	450	9	750	2.5	1.0	1.4	15.8	200	2.0	30
	50 - 59	55	2300	9.6	53	450	9	750	2.5	0.9	1.4	15.2	200	2.0	30
	60+	55	2000	8.4	53	450	9	750	2.5	0.8	1.2	13.2	200	2.0	30
Adult Women (Moderately active)	20 - 39	50	2000	8.4	41	450	28	750	2.5	0.8	1.2	13.2	200	2.0	30
	40 - 49	50	1900	7.9	41	450	28	750	2.5	0.8	1.1	12.5	200	2.0	30
	50 - 59	50	1800	7.5	41	450	9	750	2.5	0.8	1.1	11.9	200	2.0	30
	60+	50	1600	6.7	41	450	9	750	2.5	0.8	1.0	10.6	200	2.0	30
Pregnancy (later half) Lactation (First 6 months)			+350	+1.5	54	1200	28	750	+7.5	+0.1	0.2	+2.3	400	3.0	50
			+550	+2.3	65	1200	28	1200	+7.5	+0.2	+0.4	+3.7	300	2.5	50

- Notes: 1. Adapted from
 (a) Recommendations by PHI/WHO/IMR/UM Technical Subgroup 1969.
 (b) WHO Monograph Series No. 61, Geneva 1974.
2. MJ = Megajoules 1000 Kcal. = 4.184 MJ.
3. NPU = Net Protein Utilization, a term used to describe the biological value and digestibility of protein.
4. Recommended intake of iron based on absorption of iron under different conditions. For Malaysia absorption assumed to be 10%.
5. It is assumed that 80% of vitamin A in the Malaysian diet is derived from plant sources, mainly in the form of Beta carotene.

TABLE 2: DAILY FOOD ALLOWANCES FOR MALAYSIAN CHILDREN, REFERENCE WOMAN, PREGNANT, NURSING MOTHERS. (ADAPTED FROM RECOMMENDED ALLOWANCES FOR FILIPINOS REVISED 1970 AND FROM SUGGESTED DAILY ALLOWANCES FOR CHILDREN - PUBLIC HEALTH INSTITUTE PUBLICATION, KUALA LUMPUR, 1971).

	Food Groups	Reference Woman	Pregnant	Mothers	1 - 3 years	4 - 6 years	7 - 9 years	10 - 12 years	13 - 15 years (girls)	13 - 15 years (boys)
Basis: building foods.	Protein rich meat, fish, poultry 1 serving of meat, fish or chicken = 1 matchbox.	3 - 4 servings	4 servings meat, fish or poultry.	5 servings meat, fish, poultry.	1 - 1½ servings meat, fish, poultry, etc.	1 - 2 servings meat, fish, etc.	2 servings meat, etc.	2 servings meat, etc.	4 servings meat, etc.	3 - 4 servings rice.
	legumes, dhal, lentils, tahu.	1 tablespoon	1 tablespoon	1½ tablespoons	2 teaspoons	3 teaspoons	3 teaspoons	3 teaspoons	4 teaspoons legumes.	2 tablespoons legumes.
	egg.	1 egg	1 egg	1 egg	1 - 2 eggs	1 - 2 eggs	1 - 2 eggs/week	1 - 2 eggs/week	2 - 3 eggs/week	2 - 3 eggs weekly.
	milk.	0 - 1 glass	½ - 1 glass (or 20 gm. ikan bilis).	1 - 1½ glass (30 gm. ikan bilis)	1 - 2 glass	1 - 2 glass	½ - 1 glass	1 glass	0 - 1 glass	0 - 1 glass.
Energy giving foods.	rice & other energy giving foods. 1 serving = 1 cup rice. (Well packed).	2 - 3 servings	3 - 4 servings	4 - 5 servings	½ - 1½ servings	1 - 2 servings	2 servings	2 servings	2 - 3 servings	3 - 4 servings.
	1 serving root crop = 1 cup or 1 medium size.	½ serving	½ serving	½ serving	½ serving	½ serving	1 serving	1 serving	2 servings	2 servings
	Fat and oils	2 tablespoons	3 tablespoons	3 tablespoons	5 teaspoons	5 teaspoons	2 tablespoons	2 - 3 table- spoons.	2 table- spoons.	3 table- spoons.
Protective foods.	Leafy and yellow vegetables. 1 serving = ½ cup cooked or 1 cup raw (kangkong, bayam, sawi, cekor manis, kelor, pucuk ubi, pucuk paku).	1 - 2 servings	1 - 2 servings	2 - 3 servings	1/8 cup or 2 tablespoons	1/8 cup or 2 tablespoons	1/8 cup or 2 tablespoons	3 table- spoons.	½ - ½ cup	¼ - ½ cup
	vitamin C rich foods. 1 serving = 1 medium size. or 2½ tahlis (guava, tomato, orange, papaya, pineapple, etc.).	1 - 2 servings	2 - 3 servings	2 - 3 servings	2 tablespoons	2 tablespoons	3 table- spoons	3 tablespoons	2 - 3 servings	2 - 3 servings
	other fruits & veg. 1 serving = 1 slice or 1 medium size. (Pumpkin, carrots, long beans, brinjal, ladies fingers).	2 - 3 servings	2 - 3 servings	3 - 4 servings	2 tablespoons	2 - 3 table- spoons.	1 serving	1 serving	1 serving	1 serving

TABLE 3
CALORIES AVAILABILITY PER HEAD PER DAY
 (FIGURES IN PARENTHESES REFER TO PERCENTAGE OF TOTAL CALORIES)

PENINSULAR MALAYSIA 1970

Cereals	1,294*	(59.5)
Starchy and other foods	107	(4.9)
Sugar	259	(11.9)
Pulses and nuts	45	(2.1)
Vegetables and fruits	60	(2.8)
Meat and poultry	80	(3.7)
Eggs	37	(1.7)
Fish (Fresh and dry)	47	
Milk	50	(2.3)
Fats and oils	193	(8.9)
Total	2,172 Calo- ries.	

*12.5% contributed by wheat flour
 Source: (Chong, 1976)

TABLE 4
 PROTEIN AVAILABILITY - GRAMS PER HEAD PER DAY
 (FIGURES IN PARENTHESES REFER TO PERCENTAGE OF TOTAL PROTEIN)

PENINSULAR MALAYSIA 1970

Cereals	27.3*	(52.5)
Starch and other foods	1.1	(2.1)
Sugar	0.2	
Pulses and Nuts	2.0	(3.8)
Vegetables and fruits	1.8	(3.5)
Meat and poultry	5.8	(11.1)
Eggs	2.7	(5.2)
Fish (fresh and dry)	8.5	(16.3)
Milk	2.4	(4.6)
Total Proteins	52.0 gm.	
Animal Proteins	19.2 gm.	
% Animal Proteins	37%	

*12.5% contributed by wheat flour.

Source: (Chong, 1976)

TABLE 5
COMPARISONS OF IMR BETWEEN ETHNIC GROUPS AND
BETWEEN ETHNIC GROUPS AND BETWEEN NATION IMR 1974

	<i>Malays</i>	<i>Chinese</i>	<i>Indians</i>
<i>STATES</i>	<i>IMR</i>	<i>IMR</i>	<i>IMR</i>
National	35.39		
Johore	40.60	31.57	43.37
Kedah	39.14	27.48	45.92
Kelantan	47.56	36.65	25.91
Malacca	40.22	29.74	40.04
N. Sembilan	33.44	24.56	32.69
Pahang	35.05	21.47	41.67
Penang	38.92	27.75	43.87
Perak	37.46	25.37	43.47
Perlis	37.79	28.13	54.55
Selangor	34.63	23.33	35.90
Trengganu	41.07	21.55	21.74

National IMR = 35.39

Source: Vital Statistics for Peninsular Malaysia, 1974
 Department of Statistics Publication, 1974.

TABLE 6
COMPARISONS OF TMR BETWEEN ETHNIC GROUPS AND
BETWEEN ETHNIC GROUPS AND NATIONAL TMR 1974

	<i>Malays</i>	<i>Chinese</i>	<i>Indians</i>
<i>STATES</i>	<i>TMR</i>	<i>TMR</i>	<i>TMR</i>
Johore	3.68	1.81	3.12
Kedah	5.01	1.20	5.18
Kelantan	4.76	1.40	1.27
Malacca	2.35	1.67	3.59
N. Sembilan	3.22	1.96	4.12
Pahang	4.45	1.66	4.60
Penang	2.76	1.62	2.35
Perak	3.68	1.70	4.52
Perlis	3.48	2.39	-
Selangor	2.70	1.35	3.14
Trengganu	5.16	0.53	-

National TMR = 3.37

Source: Vital Statistics for Peninsular Malaysia, 1974
 Department of Statistics Publication, 1974.

TABLE 7
PREVALENCE OF MODERATE* FORMS OF PCM
IN RURAL PRESCHOOL MALAY CHILDREN

<i>Location</i>	<i>Prevalence</i>
Ulu Trengganu	32%
Kuala Trengganu	20%
Ulu Rening	19%
Kuala Langat	10%
Ulu Langat	6%
Army Children	8%
Upper Income (from city of Kuala Lumpur)	Nil

(* Moderate PCM is deem to exist in any child whose weight-for-age fall between 60% to 70% of Harvard Std.)

Source: (Chong, 1976).

TABLE 8
PREVALENCE OF SEVERE PCM IN RURAL
PRESCHOOL MALAY CHILDREN

<i>Location</i>	<i>Prevalence</i>	
Ulu Trengganu	9/209	4.3%
Kuala Trengganu	7/278	2.5%
Sg. Selisek	11/419	2.6%
Kuala Langat	2/395	0.5%
Army Children	1/550	0.2%
Ulu Rening	0/52	0%

Source: (Chong, 1976).

TABLE 9
THE PREVALENCE OF ANEMIA IN RURAL
PRESCHOOL CHILDREN

	<i>No. of Children Studied</i>	<i>% Children with Hb Below 11 g per 100 ml Blood</i>
Sg. Selisek	419	40%
Ulu Trengganu	203	37%*
Kuala Trengganu	399	23%
Ulu Rening	43	21%
Ulu Langat (TABIKA)	32	19%
Kuala Langat	128	11%
Army Children	127	11%

(* Where Hb was not available, PCV of $\leq 33\%$ was used as cut off point for anemia)

Source: (Chong, 1976)

TABLE 10
PREVALENCE OF VISIBLE GOITRES IN WOMEN AT
DIFFERENT AGES IN WEST MALAYSIA (%)

	<i>10 - 14 years</i>	<i>20 - 34 years</i>	<i>35 - 44 years</i>
Malays R	41.	38.4	37.9
Malays NR	2.8	8.6	22.6
Chinese	3.5	19.5	10.5
Indians NR	22.8	52.7	25.0

R = Remote
NR = Non-remote
Source : Polunin

MALNUTRITION AND MENTAL DEVELOPMENT

G.L.Khor

Although concern with nutrition in child development is not new, it is only recently that systematic attention has been directed to the possible causal effects that malnutrition in early life may have on intellectual functioning and learning abilities in later life.

Malnutrition may be defined as the state of impaired functional ability or development caused by an inadequate intake of essential nutrients or calories to provide for longterm needs (Read, 1973). Malnutrition in mild, moderate or severe degree manifests itself in specific symptoms or conditions, such as anemia, goiter, vitamin deficiencies or growth retardation. Severe malnutrition refers to marasmus* or kwashiorkor* which results from prolonged calorie or protein restriction respectively especially in early childhood. Often, marasmus occurs in infants when breastfeeding is prematurely terminated for varying reasons and substitutes for mother's milk are not available or are nutritionally inadequate. Tissue wasting and severe growth retardation result. In contrast, kwashiorkor occurs when the child changes from breast or bottle milk to foods high in starch but low in protein. It is characterised by the presence of oedema (accumulation of extracellular water) which may conceal weight loss, skin ulcers and depigmentation of the hair. Both marasmus and kwashiorkor can lead to early death if untreated.

In an attempt to explore the interrelations between malnutrition and other aspects of the environment, a number of epidemiological* surveys of human population have been undertaken and animal models have been sought. The latter enjoys several advantages in comparison to field studies of humans. The environment can be regulated so that, except for the nutritional variable, conditions are nearly the same for the experiment and control animals. Also there is the opportunity to correlate behavioural changes with neurophysiologic changes and

with histological*, histochemical* and biochemical changes in the central nervous system. Nevertheless, there are problems associated with animal studies such as difficulty in interpreting what a given behaviour really means. Notwithstanding that, these animal and human studies have pointed to an association between malnutrition during a critical period of development and disturbances in learning ability, memory and behaviour (Winick, 1969; Cravioto and Delicardie, 1971; Mönckeberg et al, 1972). However, it should be stressed from the outset that since malnutrition usually occurs in a milieu where low socio-economic status, limited education, poor sanitary condition and recurrent infections are common, it is difficult to isolate the nutrition factor as a single causal effect of suboptimal mental and motor development of the individual.

The impact of nutritional deprivation is related to its severity and the age at onset. In line with this, marasmus appears to be more detrimental to behavioural development than kwashiorkor, probably because marasmus occurs earlier. Cravioto and co-workers (1966) have described the critical period as being under six months of age whereas Hertzog et al (1972) stated that severe malnutrition requiring hospitalisation at any time during the first two years of life will have equally adverse effects. The significance of age of malnutrition in a child is believed to be closely linked to the cellular development of the brain.

Generally, three phases of growth in all organs including the brain can be identified, namely hyperplasia (cellular growth due to cell division), hyperplasia and hypertrophy (increase in size of existing cell) followed by hypertrophy alone. Hyperplasia is measured by the synthesis of deoxyribonucleic acid (DNA)* which stores the fundamental genetic information of the cell. This DNA synthesis in the brain is linear* prenatally (i.e in the fetus), reaching a peak in the second trimester of pregnancy (due to rapid increase of neuronal cells), and a second peak extending through the first two years of life (characterised by glial cell and synaptic formation) (Dobbing and Sands, 1973).

According to Winick et al (1970), cell division in the human cerebrum and cerebellum stops between 12 and 15 months of age after birth. Thus if malnutrition were imposed during the proliferative phase of growth (i.e. during hyperplasia), the rate of cell division would be slowed down resulting in a deficit in the ultimate number of cells. Experiments on animals and studies on children hospitalised for marasmus or kwashiorkor have supported this neurologic consequence (Cravioto et al., 1966; Klein et al., 1972; Rosso et al., 1970). The earlier the onset of the malnutrition, the more severe and the more permanent are the effects. In contrast, undernutrition imposed during the period of hypertrophy will curtail the cellular enlargement, but on subsequent rehabilitation the cells will regain their normal size.

Besides disturbing cellular division, malnutrition imposed in test animals shortly after birth has been shown to affect the biochemical functioning of the brain, such as the synthesis and deposition of glycoproteins*, the synthesis of certain neurochromones*, and the activity of certain enzymes involved in both protein and ribonucleic* acid metabolism (Shoemaker and Wurtman, 1971; Di Benedetto and Cioffi, 1972). Total cholesterol* or phospholipid* content is reduced thereby decreasing myelin synthesis (myelin being the cell outer membrane of the nerve cell). Thus the major effect of early postnatal* malnutrition is deemed to interfere with cellular growth.

The human brain will produce a similar detrimental biochemical response to malnutrition to that which has been described in lower animals (Winick, 1976). The question which ensues is to what extent the learning ability, memory and intelligence are affected by malnutrition in early life, as a consequence of its deleterious effects on the cellular and biochemical development of the brain. Many studies have been undertaken to look into this question but as mentioned previously, it is difficult to isolate malnutrition as the cause *per se* of any mental deficiencies found, since the malnourished children invariably come from a more deprived environment than even the most carefully matched control group.

Moreover, these children, either bed-ridden or relatively inactive for long periods of time before and after the serious illness, would suffer a loss of "learning time". In addition, the stress of separation from home and family during hospitalization might possibly have a long-term effect. Hence the responsiveness of the parents, their educational levels, size of the family and infection are some of the uncontrolled variables which could influence the recovery of the child, mentally and otherwise, after an episode of kwashiorkor or marasmus.

A thorough study conducted in India found significant behavioural differences between children hospitalised for kwashiorkor when they were 1.5 to 3.0 years old, and other children matched for age, sex, religion, caste, socio-economic status, family size and educational background of the parents (Champakam et al., 1968). The previously malnourished children were found to be retarded in their perceptual ability (as tested by picture completion, simple object assembly and block design), and abstracting capability (as determined by reading comprehension and arithmetic tests). Their performance was also poorer in the intersensory tests (which include placing blocks in openings, tracing block shapes and differentiating block shapes by touch alone). About a 35 point Intelligence Quotient (I.Q.) difference was found to persist for six or more years after clinical recovery from kwashiorkor. Also the previously malnourished children were smaller and lighter than the controls in every age group.

Another finding based on a comprehensive series of studies on malnutrition in Mexico and Guatemala revealed that population of uniform socio-economic backgrounds showed that their performance on psychological tests was related principally to dietary practice and less to differences in educational, social or economic indicators (Cravioto et al., 1966). Three workers showed that the earlier the malnutrition, the more profound the psychological retardation. The most severe retardation occurred in children admitted to the hospital under 6 months of age and did not improve on testing even after 220 days of treatment. Children admitted later in life with the same socio-economic background and the same severe malnutrition did recover after prolonged rehabilitation.

A report on the follow-up of 36 Serbian children, who had been hospitalised for severe malnutrition when they were between 4 and 24 months of age, found that their mean I.Q. at 7 to 14 years of age was significantly lower than that for a group of normal children of unskilled workers (Cabak and Vajdavic, 1965). Liang et al., (1967) working in Indonesia also found in previously malnourished children a similar lowering of I.Q. even when they reached between 12 to 15 years of age. In Chile, Münckeberg et al., (1972) revealed significant correlations between growth and low intellectual capacity, and between the frequency of retardation of psychomotor development and the amount of animal protein consumed by children living in the slums. Also observed was the close relationship between the mother's I.Q. and the nutritional status of her children. This vicious circle explains partly why malnutrition tends to persist generation after generation.

Insofar as the damaging effects that malnutrition in early childhood have on mental development, two causal possibilities have been suggested by Cravioto and Delicardie (1973). The simplest hypothesis would be that nutrient deficiency directly affects intellect by producing damage to the central nervous system. Protein is crucial for the synthesis of axons* and dendrites* in the nervous system. Inhibition of protein synthesis in the brain produced by puromycin* has been shown to cause a loss of memory in mice (Flexner et al., 1962). Although most researchers fail to distinguish between protein and calories as limiting factors, protein malnutrition is considered to have more deleterious effects than does calorie undernutrition.

The second hypothesis postulates that malnutrition may contribute to intellectual inadequacy indirectly through 1) loss of "learning time" resulting in some developmental lags; 2) interference with learning during critical period of development resulting in suboptimal performance on learning tasks, and 3) reduction in motivation resulting in apathetic behaviour.

CONCLUSION

Before the advent of the sixties, the relationship between nutrition and mental development engendered little interest. The repeated observation that infants and children at a high risk of malnutrition tend to cluster in the lowest socio-economic segment of the population led many to believe that the effect of malnutrition was just the effect of social class, not deserving a separate investigation. In reality, protein-calorie malnutrition is a man-made disorder characteristic of the lower income segments of society. Through limited access to goods and services and restricted social mobility, families are unable to give priority to adequate nutrition resulting in malnourished individuals especially children.

In Peninsular Malaysia, severe marasmus was shown to occur in 4.4% of the preschool children in Ulu Trengganu (Chong and Lim, 1975). This rate is comparable to those reported by WHO for developing countries in Latin America, Africa and Asia. Milder forms of malnutrition were also prevalent with an incidence of 32% in some rural areas (Chong, 1976).

From the numerous experiments on animals and studies on malnourished children, with a few exceptional cases, severe malnutrition inflicted prenatally and in the first 2 years of life, especially during the first 6 months, would impart a more permanent damage than if it occurs at an older age. However, in view of the difficult methodological problems encountered with human studies and the multifarious causal factors involved, more work is needed to unravel the roles played by such factors as hospitalisation, social stimulation, maternal health and nutrition during pregnancy, birth damage and infection, in order to have a clearer understanding of the implications malnutrition have on the mental development of the child.

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WHY YOU SHOULD BREASTFEED YOUR BABY

Zaitun Yassin

Children of today are increasingly being deprived of a natural resource, that is, their mother's breast milk, at the start of their lives. This decline in breastfeeding is considered to be a waste of a valuable natural resource, if measured by the same yardstick as oil supply. Losses of millions of dollars is going virtually unnoticed in many of the poor and developing countries of the world. For instance the trend towards bottlefeeding in the small Republic of Singapore between 1951 and 1960 can be calculated to have required the payment in foreign currency of about US \$1.8 million per year to cover the importation of formula, (Berg, 1977).

Yet in many developing countries mothers are abandoning breastfeeding. Studies in the Philippines have shown the growing popularity towards bottlefeeding among the low income families (Guthrie, 1974; Paredes, et al, 1977). This tendency should be of great concern because babies are more often fed with condensed milk or they receive too dilute a formula.

Similar trends were also observed in rural areas in Malaysia. As a case, in a rural area in Kelantan, although about 95 per cent of the mothers breastfed their babies at birth, only 18 per cent were breastfeeding fully up to three months and nine per cent up to six months (Balakrishnan, et al, 1977). The above data compare well with those in Perlis, where about 84 per cent of all mothers were breastfeeding (Teoh, 1975). Thus, the number of mothers who breastfed their babies for at least a duration of four to six months do not seem to be too encouraging. Conversely, a study carried out in the Applied Nutrition Project in Telok Lutuk revealed that 98 per cent of the babies were breastfed at birth and about 71 per cent still breastfed till the age of 11 months (Mohd. Omar, 1975).

Causes for this change in pattern of infant feeding are multiple and complex. Some of the significant influences include urbanization, modernization, change in attitudes and new social values.

Breastfeeding is often considered an old-fashioned or backward custom. Mothers get very embarrassed when they have to nurse their babies in public. In addition, due to stress of modernization, there may be failure to lactate. Culturally, the natural function of the breast has become distorted. Advertising, movies, fashions and other mass-media have glamorized the breast. It is now linked with sexual attractiveness rather than its primary purpose, which is to give milk to the newborn.

Breastfeeding is also abandoned due to the "rat-race". More opportunities are now available for mothers to work away from home. They have turned to artificial feeding to free themselves from the constraints of motherhood and for convenience.

Alternatives to breastfeeding are also made known through improved communication and the unethical promotion of the sale of formulae by commercial concerns. In hospitals here, whether government or private, free samples were usually distributed to new mothers by the so-called "milk-nurses" to promote directly or indirectly the product of their company. In addition, they obtain names and addresses of mothers who have given birth and visit them at homes with advice, information and more free samples. Even before the child is born mothers were already exposed to milk companies' sales tactics. Reading materials in ante-natal clinics, and all too often walls of health centers and hospitals consist of advertisement of infant food companies.

Nevertheless, let us re-examine the situation and ponder at this statement, "why YOU should breastfeed your baby".

There are many reasons why you should breastfeed your baby: it is good for you, good for your baby, good for your husband and good for the other children in the family. Ignorance on the part of new mothers is one of the reasons they do not breastfeed. They think that bottlefeeding is the easy way. On the contrary, breastfeeding is much easier. It is as normal and natural as breathing. However, knowing the correct technique can give you more confidence and help make it more enjoyable to breastfeed.

The greatest gift that you can give your child is to give yourself. What better and closer way can you show your love for your baby than through breastfeeding? You should learn as much about breastfeeding as you can to help you decide whether you should try it or not. Do not be influenced by your friends, relatives, neighbours or other well-meaning people. But do not ignore totally their opinions, instead you should carefully weigh the pros and cons of breastfeeding before you make your decision. Turn to well-informed and if possible, neutral sources for advice.

In Malaysia, the Persatuan Penasihat Penyusuan Ibu (PPPI)** is a voluntary group of mothers who have already breastfed and would like to help other women who are interested in breastfeeding. This association can provide assistance to you if you wish to breastfeed your baby and also make available information on the advantages and techniques of breastfeeding.

Facts, figures and friends may help you to decide whether or not you will breastfeed. However, more important consideration should be given to an unseen, invisible force - the spirit - and the psychological readiness of you to breastfeed.

** Address: Persatuan Penasihat Penyusuan Ibu,
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Kuala Lumpur 01-21.

Your decision to breastfeed will be based on many facts and also the way you feel about it. You will soon realise the joy and pleasure and advantages of breastfeeding your baby. Besides helping to restore your figure more quickly to its normal, non-pregnant state, breastfeeding is cheaper, easier, safer and faster. There will be no fuss to sterilise bottles, to mix and refrigerate formulas. Breastmilk is always at the right temperature. If you nurse your baby, you will also conserve your iron stores because breastfeeding may temporarily eliminate, delay or reduce the menstrual flow. However, delay in the return of menstruation does not mean that there has also been a delay in ovulation (Warner, 1970). So you can get pregnant while nursing.

Your breastmilk is in many ways the perfect food and usually it is capable of meeting your baby's nutritional needs for his first four to six months of life. Your baby will have less risk of intestinal illness or infection because your breastmilk is clean and sterile. Besides being easily digestible, it also provides a host of protective factors thus making your baby more resistant to bacteria or viruses attack.

Cow's milk intolerance is another good reason why you should breastfeed your baby. According to a pediatrician, one in every 100 babies born in hospitals in Malaysia are susceptible to it (Leung, 1979). Breastfeeding your baby will serve as a protection against this allergic reaction. Otherwise, if your newborn baby is the unlucky victim, you may have to face the consequences of your child persistently purging and without proper treatment he may eventually die of severe malnutrition.

On the part of your husband, breastfeeding, besides being economical on the budget, will also make him proud of you for being willing to give yourself fully and completely to your baby. Thus your marriage bond can be strengthened and deepened.

Breastfeeding will also give you more time to devote to other children in the family and psychologically you are creating a happy, healthy feeling about breastfeeding. Your children will learn to accept breastfeeding as a natural thing. They will not be embarrassed or shocked in later years when they see a woman breastfeeding.

To sum up the advantages, you will find that breastfeeding adds enrichment and enjoyment to the life of every member of the family.

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"NURSING BOTTLE" SYNDROME

Zaitun Yassin

"What is a 'Nursing Bottle' Syndrome?" Nine out of ten of our Malaysian mothers just answer, "I don't know!"; "I've never heard of it", "What is it?" or any such answer which indicates their ignorance. It took an accident to happen before one educated American mother learned what the syndrome was all about. It was after her 19 month old son had one front tooth broken off down to the gum (Robinowitz, 1974). Which was already too late!

"Nursing Bottle" syndrome or "bottle mouth" caries* is a phenomenon seen in children between one to four years old who had prolonged bottle feeding (Beazley, 1978). This can happen in any child who has erupted teeth. Various kinds of bacteria are normally found in the human mouth. Some of these bacteria may produce alkaline substances, but the majority are apt to produce acids. Fermentable carbohydrates exposed to the teeth over prolonged periods in the presence of certain acid forming oral bacteria produce the acid which causes the decay.

One of the main sources of the problem is the common practice of giving milk or fruit juice in feeding bottles at sleeping time, usually to quieten the child. When a child sucks from a bottle while he is awake, the swallowing reflex is rather quick and thus little time is allowed for the teeth to be exposed to the fermentable liquid. On the other hand at bedtime he swallows rather slowly and the flow of saliva is also reduced, so that much of the undiluted fluid tends to pool around the teeth. This stagnating of sweet fluids causes the decay mainly of the upper front teeth. The lower teeth seem to be protected because the saliva collects in the lower mouth, and tends to dilute and neutralise the fluid around the teeth.

Most of our Malaysian children can qualify for the "bottle-mouth" syndrome, because they normally have prolonged bottle feeding up to two or three years old. They usually insist on having a bottle before they can go to sleep or they wake up in the middle of the night for additional feedings. Some mothers also aggravate the situation by allowing children to nibble on carbohydrate foods like crackers or biscuits usually to keep them occupied or quiet just before bedtime.

Dental care is also quite lacking among our young children from a very early stage. It could be ignorance on the part of the parents or persistent refusal by the young child, due to discomfort. Children younger than two or three years old are seldom taught or trained to brush their teeth regularly. At least, they should be encouraged to rinse their mouth with plain water after each meal to remove food residues.

It cannot be denied that dental caries is the most prevalent public health problem in much of the world. Almost 100 per cent of the population in Europe and North America have or have had caries, and as much as 40 to 60 per cent of the population are affected in countries where the incidence is considered to be low. But, we are quite concerned with the young children. For instance, about half of the children in the United States have one or more decayed teeth by the age of two (Leske et al, 1974). The incidence among our young Malaysian children could be even worse!

Dental problem like loss of a front tooth or several teeth can be quite a traumatic experience for a young child. It can result in pain, disfigurement, teasing, dentures and psychological harm to the child and even the parents. It could also later lead to a feeding problem and subsequent abdominal pains due to poor chewing of foods. Cavities or tooth decay is not easily detected. Thus, serious decay could happen for a year or two before it is discovered. Parents should be concerned if there is any general behavioral disturbances such as their child's restlessness, poor appetite or crankiness. These behavioral changes could lead to the discovery of dental problems in the child.

Being a mother of a 20 month old girl who still insists on her bottle feeding before she can sleep, has prompted me to inform and warn other parents and those who work with parents of the potential hazards of prolonged and frequent night bottle feeding after a child is a year old. Although our daughter has not lost any of the teeth nor is there sign of decay yet, we hope she will not have to go through with expensive restoration or unpleasant experiences with the dentist at a very tender age.

Beazley (1978) pointed out the fact that this subject was seldom mentioned in prenatal instruction or by a doctor or a dentist to a mother. True enough, nowhere in my experience or training was I exposed to this important information except by a colleague, who had warned me not to feed our daughter with milk or fruit juice at night after her teeth had erupted. I did not take her caution too seriously, giving the excuse that our daughter is usually very hungry at night. Only after I had read the article by Robinowitz (1974) did I become quite concerned and would like to share the knowledge with others, especially our Malaysian parents.

Prevention is better than cure. Thus "nursing bottle" syndrome should be prevented. However, first the parents, and those who come in contact with parents and their children, should be made aware of the problem. One of the best ways of disseminating this information is through prenatal^{*} and postnatal^{*} instruction especially by the maternal and child health clinics or centers. Besides that, it can also be included in nutrition or health education programmes for parents in the rural health clinics or by community development workers or other extension agents of the various ministries and government agencies in our country.

To prevent this syndrome is to remove the source of the problems, that is, prolonged bottle-feeding. It is wise and highly recommended to break the habit of night bottle feeding if the child is past 12 months or even 10 months when the teeth have already appeared. Breaking the habit is not an easy task especially when the child is in the routine of waking up at night and expecting his

bottle of milk or juice. However, parents can start training the child from an early age by feeding him before he goes to bed instead of leaving the bottle with the child in bed. Young children between 12 to 18 months also normally wake up occasionally at night because they are thirsty. It is good practice to offer only water in the bottle to quench their thirst. We have been giving our daughter just water in her bottle and she usually accepts it and goes back to sleep. She only gets her bottle of milk when she wakes up in the morning.

Avoiding the bottle in bed is also a way to expedite weaning. Children should be trained to drink their milk or fruit juice from a cup even before they reach the age of one year. Thus, they will not be too dependent on the bottle and parents can gradually stop giving the bottle completely.

Dental care and hygiene is another way to check this problem. According to Dr. Spock (1976) it is recommended that babies' teeth be brushed when they have their first set of molars. For most babies this would mean at the age of 18 to 24 months. However, it is wise to wait until the child is about two years old, because at this age the child really has the desire to imitate. He should then be provided with his own tooth brush, so that he can copy his parents when they brush their teeth. Although, the way he brushes might not be efficient at first, parents should help tactfully.

Parents should also be encouraged to examine newly erupted teeth carefully for signs of decay. Dental examination by an understanding dentist should then start at about the age of three years continuing every six months. Teeth are apt to decay at this stage. Cavities can be filled before it is too late. These regular visits will also minimize the child's fear of going to the dentist in later years.

It is a wrong concept for parents to think that caries in the milk teeth should not be of great concern, with the notion that after all the teeth will be replaced by a permanent set of teeth. Once a tooth is decayed, it not only causes pain to the child but it may lead to jaw infection or the eruption of

infected permanent teeth. Extraction of a milk tooth before it is ready will leave a space in the gum causing other teeth to grow out of position. So the care of the temporary teeth is just as important as the permanent ones.

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DOES YOUR CHILD HAVE A SWEET TOOTH?

G.L.Khor

It is estimated that 70 to 80 per cent of children in Malaysia below 10 years of age show some degree of dental decay. This is despite the fact that there are dental clinics throughout the country, albeit mostly in the urban areas, which provide free dental services to school children. Perhaps some parents are ignorant of the availability of such facilities, or perhaps they are not very concerned over their children's dental health. Private dental clinics are also within the access of most urban dwellers but their relatively higher charges may serve as a deterrent to those in the lower income group. Consequently, dental check-up is not a regular feature in many homes and most people go to the dentist only when it is too late, that is, for a filling or an extraction. Dentists normally recommend a check-up once every six months for both children and adults, especially the former whose developing teeth are more vulnerable to decay.

The idea that specific foods have particular significance in causing dental cavities or caries can be dated to the time of Aristotle who commented on the sweetness of figs as the cause of dental decay. Since then, the association between caries and sweet foods has been noted repeatedly. Acids formed from lodgment of food was also blamed for tooth destruction by several workers in the nineteenth century. The acids were believed to be produced by oral bacteria acting on carbohydrate foods. This finding engendered a series of studies on the cariogenicity (caries-causing) of different foodstuffs which have continued to the present day.

That acid is indeed the destructive agent of enamel has been verified by advanced techniques of microradiography or polarizing microscopy. Experiments using both animals and man also have concluded that the origin of acids in the mouth is from bacterial fermentation of carbohydrates. The question that ensues is, which carbohydrate foodstuffs are more cariogenic than others?

In reality, the answer is complicated by a number of factors. Firstly, one must appreciate that in a normal diet of mixed foodstuffs, there would be some inherent buffering capacity in addition to the buffering action of the saliva. This means that whatever acid is formed is held for a much longer time before the inhibiting pH is reached with consequent greater final acid formation, for example, a mixture of bread and vegetables can produce more acid than sugar itself since sugar fermentations rapidly reach a low pH which would inhibit further acid formation by the oral bacteria. For the same reason, acid drinks such as carbonated beverages and fruit juices are not cariogenic. However, with sweet fruit juices, which are not sufficiently acidic, when fed to infants and small children in a bottle can lead to the formation of caries especially at the upper denture which are in contact with the juice.

The amount of acid produced from foods on fermentation is only one of the factors which determine their cariogenicity. Foods which tend to be retained on the tooth surface in the greatest amounts would have the greatest potential for caries production. Foods such as dried fruits, chocolate, toffee, biscuits, bread, potato and pastry products show greatest retention while fresh fruits and juices have the least.

Even among the "sticky" foods mentioned, a degree of difference in their cariogenicity has been noted. It appears that the sugar taken in chocolate is less cariogenic than the sugar in caramels and toffee. Experiments have suggested the presence of enzyme inhibitors or enamel protective factors in the chocolates.

The nature of the carbohydrate also influences its cariogenic action, for example, sucrose (sugar) or glucose supplements are very active cariogenic agents compared to starch. This is believed to be due to the relatively larger starch molecule which does not so readily penetrate and diffuse through the dental plaque. Another important observation is that the cariogenic effect of sucrose is accentuated during early tooth formation, development and calcification.

The physical form of the carbohydrate is another variable which affects the extent of caries production. Sugar in solid form has been shown to be more cariogenic than liquid sugar which has a lesser tendency to be retained.

Perhaps the prime factor in caries activity lies in the frequency of the consumption of cariogenic foodstuffs, for example, taking of candy, which has a strong tendency to be retained, between meals can lead to a marked incidence of dental caries. Studies have shown this to occur even when there was no over-all difference in the total sugar intake when compared to taking of sugar at meals only.

In summary, data are available which point to the adverse effect of carbohydrates, particularly sucrose, on dental caries. The more frequent the intake of sugar, especially in a highly retentive form like toffee and other types of candy and sweets, the greater is the caries activity. Since caries begins with the destruction of the inorganic enamel, developing teeth of children are specifically liable to caries attack. Hence, cutting down those "sticky" sweet food especially between meals is imperative followed by regular check-ups by your dentist.

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WHEN A CHILD CHOKES

Eleonora Sanders

All children choke - all people choke sometime during their lifetime, but, in the United States, for example, 1,500 children under the age of four years die every year directly because of choking. Approximately another 1,000 die from the results of choking. They inhale foreign material into the lungs and die of a type of pneumonia. (Figures for Malaysia are not known).

What is choking? It is an inability to breathe or cough. Some object or material is completely or partially blocking the air passage to the lungs (trachea). A reflex spasm at the site of the blockage lasts for a minute or two. When the spasm relaxes, the reflex cough - or attempt to cough - begins. If the inhale pressure for the cough is greater than the exhale pressure of the cough, the material is sucked even farther down the air passage. Fortunately, if a cough is accomplished, the exhale pressure (cough) is the *greater* and the material is expelled or brought closer to the mouth. Sometimes a series of coughs will expell the material. But, if the blockage is complete and will not allow a cough to be produced, strangulation occurs. The victim turns blue in the face, neck and hands (already a sign of lack of oxygen to the tissues). Eventually, if relief does not occur, the lips turn bluish-black, the eyes look wild and frightened followed by unconsciousness and death. All of these events can happen in a few (six to ten) minutes - **UNLESS** the process can be interrupted. Or, in other words, unless air (oxygen) can reach the lungs in time to avoid, not only death itself, but damage to brain and nerve cells resulting from prolonged oxygen starvation. Such damage, depending upon the degree, can cause permanent defects in mental function and muscle control.

So, what should be done when a child chokes?

An infant drinking milk from the breast, or any fluid from a bottle should be held forward with its head lower than its abdomen to allow gravity to

help expell the drops of moisture that got into - or started into - the air passage. NEVER raise one or both arms! This causes the child to *inhale* and could easily pull the moisture into the lungs where it could cause an aspiration pneumonia. Obviously, it is a dangerous practice to prop up an infant with pillows, put a bottle in its mouth, and leave the room.

Similarly for a child, put the head lower than the abdomen, holding the child by its heels (if the adult is strong enough) or hold the child upside-down over the adult's arm. If gravity and the cough do not dislodge the obstacle, give a sharp "hit" between the shoulder blades over the spine. If that fails, hang the child over the adult's clasped hands at the child's abdomen and his head away from the adult's body. Then, keeping as calm as possible - sharply press the child into the adult's abdomen with a regular breathing rhythm. This manœuvre (Heimlich) should sharply press the child's diaphragm upward (toward the head) causing increased rhythmic pressure against the obstacle and thus, hopefully, dislodging it. Here, gravity and induced exhale pressure are working together. If these measures fail, the situation is desperate - but DON'T PANIC. Take the child to Emergency in a hospital as fast as you can. A last resort life-saving measure could be a quick cut with a very sharp knife into the air passage (trachea) below the obstacle. This requires more courage than most people have, and of course, carries grave risks.

The manœuvre of rhythmically and sharply pressing up on the diaphragm has saved many adults who have choked on food. It can also be self administered by an adult. Lean over the back of a chair and forcefully bounce the abdomen on the back of the chair. At the same time, drag the chair to the telephone and dial the community emergency number. This, of course, takes "presence of mind", requires calmness and the assumption that one does need help.

After such a frightening episode, for either a child or an adult, one should be checked by a physician to determine if, indeed, the whole obstacle has been dislodged or if any damage has been done to tissues or bones.

Prevention, is after all, the best state. The following ideas should be of help. (From First Aid and Personal Safety, The American National Red Cross, page 93, Doubleday and Co. Inc. Garden City N.Y. 1973).

FOR THE SMALL CHILD

- 1 - Keep articles that may be accidentally swallowed or aspirated out of the reach of infants and small children.
- 2 - Caution older children not to put small objects in a baby's mouth or within his reach.
- 3 - Do not hold open safety pins in the mouth when changing a baby's diaper. A pin may slip out of the mother's mouth into the mouth of the baby. Take care not to leave safety pins within reach of the child.
- 4 - Provide sturdy, safe toys without small parts that might become detached.
- 5 - Do not give small children nuts or candy containing nuts, raw carrots or other uncooked vegetables, fruits that require chewing, unchopped meat, or any foods containing large seeds or pits until the age of about four years.
- 6 - Do not allow a child to play with beans, peas, hard kernels of corn, or large seeds.
- 7 - Do not stimulate a child to laugh or cry when he has food in his mouth.
- 8 - Do not permit a child to run about while eating.
- 9 - Remove bones and shells from all foods given to a child.
- 10 - As soon as he is old enough to learn, teach a child not to put foreign objects in his mouth.

FOR OLDER CHILDREN AND ADULTS

- 1 - Eat slowly; chew food thoroughly; watch for small particles of bone, seed or shell. Cut meat into small pieces.
- 2 - Prepare food carefully; watch for foreign objects in the kitchen that may become mixed with the food.
- 3 - If you are choking, remain calm. Wait until the spasm passes and then cough hard. Do not try to talk. Use the manœuvre described above.
- 4 - If you wear dentures, take special precautions in eating. Keep them in good repair. Do not wear defective dentures during the night.
- 5 - Do not go to sleep with chewing gum or food in your mouth.
- 6 - Do not chew on objects that may be swallowed or aspirated. Aside from the danger, the practice sets a bad example for small children who learn by imitation.

THE HANDICAPPED CHILD

Mary Tay

Most authorities on the subject of the handicapped child agree to the general definition of handicap as a term describing a disability which impedes a child in some way in his daily life (Ruther, Tizzard et al, 1970). The term, therefore, embraces both physical and mental handicaps of children. The scope of the word ranges from total incapacity to cope physically and mentally as demonstrated in microcephalic* children to children born with an extra finger, hare* lip or left handedness. In our country, there were 10,000 children born in 1976 with birth defects within the scope of the word handicap (as listed by the Ministry of Health). This included structural handicaps and also metabolic* disorders which eventually resulted in the children being physically crippled, mentally retarded, blind, deaf, anaemic or affected in other ways. A large proportion of adversely handicapped children die soon after birth due to their inability to cope. This acts as a natural screening of the population. In addition to the above figure quoted by the Ministry of Health is the group of children who become handicapped later on in life due to illnesses and accidents.

Generally there are two types of handicaps, physical and mental. A physical handicap usually manifests itself outwardly and is clearly visible. However, it also includes conditions such as asthma, cerebral palsy, epilepsy, and heart diseases. Definitions of mental handicaps are based on intelligence tests and often classified according to I.Q. levels. Some are educable while in other cases they may be only trainable or not even that. There is still another group who actually suffer from psychiatric disorders as indicated by the persistence of behavioral abnormality. It is sometimes difficult to differentiate all the above mentioned handicaps as they are interrelated and very often there are children who suffer from multiple handicaps.

The causes of handicaps in children can generally be classed as:

- a) Congenital birth defects.
- b) Defects brought about by environmental factors, for example, disease and radiation.
- c) Defects as a result of accidents.

a) Congenital Birth Defects

Certain genes that are passed on from parents to children can result in the birth of a child with a handicap like hare lip, haemophilia*, certain types of blindness, spina bifida*, diabetes, etc. The physical and some obvious handicaps are noticeable at childbirth but others may appear later on in a child's life. Some of these handicaps are correctable while others are not. When a child may be more prone to the disorder due to genetic factors, steps can be taken to prevent or delay the onset by regular check-ups, as in the case of diabetes. In Malaysia, as in most developing countries, the lack of facilities and personnel for genetic counseling has led to birth of children born with the same handicaps as one or even both of their parents.

b) Environmental Factors

Environmental factors are numerous and most of the time they are preventable. Disease, malnutrition, radiation and drugs stand out as the main causes. Certain diseases contacted during the antenatal* period as well as after the birth of a child can cause a child to be handicapped. This explains the concern of our Ministry of Health for the health of pregnant mothers in Malaysia. The services provided to this group of women is adequate. It is up to the pregnant mothers to take the initiative. Examples of some diseases that can handicap a child during the antenatal period are German measles, toxemia* and syphilis. Diseases like poliomyelitis, meningitis*, and a host of others can also cause a child to be handicapped.

Malnutrition needs special mention as it has been found to be the cause of some crippling diseases and it is more pronounced in developing countries. Pearson at the Second World Food Congress on 16th June, 1970 pointed out that 1,000 million children under the age of 14 were suffering from malnutrition in the world. "Among the children who survive, the results of malnutrition are devastating. Physical growth, health and strength is seriously affected" (Pearson, L.B., 1970). In 1968, it was estimated that at least 300 million children suffer from physical and mental effects of protein deficiency diseases (World Hunger, 1968). In Malaysia, a large number of children should have no reason to be blind if they had not suffered from vitamin A deficiency. Marginal malnutrition may not handicap a child in a way that would warrant treatment and rehabilitation but it can definitely affect his competitiveness both physically and mentally in school which could then be classed as a handicap.

Drugs taken during pregnancy can also cause a child to be born handicapped. Quinine, Thalidomide and Streptomycin are such drugs. During the early stages of pregnancy when the vital processes of the foetal development are critical, it is the responsibility of the mother to inform the doctor of her pregnancy if she needs care for any ailment. This prevents the doctor from prescribing medication that may be injurious to the child. Pregnant mothers should not take any medication that is not prescribed lest it affect the baby. Cultural practices like the taking of the 13-herbs or 14-herbs during pregnancy has been found to be correlated to the higher incidence of jaundice which, if not controlled, can also cause mental retardation.

c) Accidents

Accidents during pregnancy may injure a child to the extent that he is handicapped. Injuries that are sustained during delivery of the baby can also do likewise. Most accidents that occur can often be prevented but we sometimes forget the impending dangers until an accident has occurred. Highway accidents are daily affairs and usually they are reported in the local newspapers. It talks of the number dead but few report on the number that are made handicapped.

In trying to improve the beauty of our home we sometimes forget the inherent dangers of certain designs or objects. The terrace floor when wet is very slippery and is made more so with constant waxing. Split level houses are lovely, but the splits can be a danger to a child who is learning to walk. Children are accidentally scalded by hot water through curiosity or when there is nobody around to supervise them. Accidents in factories which take its toll of the working force can at most times be prevented by proper preventive measures, training, and government legislation.

High Risk Factors

It is of benefit at this point to go into some high-risk factors that can contribute to the birth of handicap children. These include: (a) Prematurity, as defined by low birth weight or length of pregnancy. Sometimes babies are born premature due to inherent pathological conditions and as such may already be handicapped. On the other hand a small baby definitely faces a higher risk of contracting diseases which in some cases weakens a child further and in some others may even cripple him. (b) Age of mothers: Adolescent mothers face the risks of giving birth to premature children which may be the precursor for diseases and finally leading to handicaps. Mothers over forty on the other hand, in addition to experiencing antenatal complications, run a higher risk of giving birth to mentally retarded children. Short birth intervals has also been demonstrated to affect the physical and mental development of the child (Grant, 1964; Holleh, 1969; Douglas, 1968). (c) Maternal illnesses like maternal hypertension also increase the risk of mental handicap in children. Furthermore, there is a host of genetically transmitted disorders. Under such conditions a child is already "handicapped" even before he is conceived. A mother who smokes excessively not only endangers her health but also that of the child. (d) High birth order has also been named as one of the high risk factors, however, this is not to be taken singly but it is closely related to the health of the mother and intervals of birth. (e) Social class of parents. It is well known that social class is determined by factors such as education, income, living conditions. High social class, ideally, should reduce the risk of having a handicapped child.

The child that is born with a handicap is further hindered by many prevailing social factors. In poorer countries, where the government is preoccupied with the abled population, they may not have the resources to provide for the welfare of the disabled population. Institutions for the rehabilitation of the handicapped are highly inadequate even in a relatively developed country like Malaysia. In this country the blind are quite well provided for. But the facilities for the mentally retarded and spastics lag far behind. As the country becomes more affluent and with raised consciousness due to the International Year of the Child, Government concern will be increased. It is hoped that more schools for the deaf, the mentally retarded and the spastic will be set up with specialized personnel. Organisations like the Malaysian Association for the Blind, the Selangor Spastic Association, the Central Welfare Council National Society for the deaf, National Association for the Physically Handicapped and National Association for the Mentally Retarded Children, have made remarkable contributions in the past and it is hoped that they will continue to cater to the increasing number of handicapped children.

Public opinion and social attitudes can have adverse effects on the handicapped. "Recent research indicates that deformity occasions greater prejudice than less handicaps, but that the greatest revulsion is accorded to those afflictions which cause most fear in others, leprosy and Epilepsy". (Special Education in the developing countries of the Commonwealth, 1972).

Unhealthy attitudes may plague the child as soon as he is born. Family rejection, ranges from total giving up of the child by leaving them at the doors of orphanages to confining the child to the house. This is common in our country where the belief is that the birth of a handicapped child is a punishment from God for misdeeds of the ancestors. Parents, therefore, tend to hide the child rather than send him to institutions that can contribute towards rehabilitation of the child. Even when the handicapped are rehabilitated there is still the problem of finding employers. The handicapped have to compete with the many abled school leavers whose numbers are on the increase every year. Moreover, their handicap narrows the scope of their employment.

When a handicapped child is born, acceptance by the family and community is critical in aiding him. This may be difficult in some cases but it is of utmost importance not to further handicap the child. Sometimes the family, out of pity and love, try to shield him, and therefore, do not allow him experiences that are beneficial. Furthermore, keeping the child at home out of fear of societal back talk will not improve the situation. Community help is needed. Once the child has been enrolled in suitable schools and institutions, families can help by reinforcing values and techniques used in schools and not try to undo them. Aid for the handicapped should be sought as early as possible. In fact, early diagnosis coupled with proper help are the key to a brighter future for a handicap child.

"The Child who is physically, mentally or socially handicapped be given the special treatment, education and care required by his particular conditions".

Third Declaration of the Rights
of the Child; Principle 5.

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"DON'T WORRY! HE WILL OUTGROW IT"

Eleonora Sanders

"Don't worry! He will outgrow it", said my friend, my neighbour, and even my physician when my small child drooled a lot, was very "floppy", seldom cried and was not as alert as children of my friends. Now he is eleven years old, a loveable, happy, "floppy", drooling, severely retarded child (Down's Syndrome).

"Don't worry! He will outgrow it", said a friend, a neighbour, an aunt and one doctor when the three year old acted as though he couldn't hear very well. Now he is seven years old with almost no ability to hear. He is in a world of silence and the loneliness that goes with it.

"Don't worry! She will outgrow it", said a friend, a neighbour, a relative and one physician when the three year old couldn't walk without holding on to someone's hand or a piece of furniture. If she tried, (which she did often) to walk alone, she "tottered" and fell. Now she is thirteen years old, an overly shy, sad-faced, overweight girl who walks bent over a cane in a waddling fashion.

Many other similar stories can be told. Parents, parents, please have your child, in whom you suspect some abnormality, examined by two or three qualified physicians every six months to get reliable information on the condition. It is quite possible that the condition may "go away" - that the child may, indeed, "outgrow it" - but suppose he *doesn't*? And, if he doesn't could something have been done when he was quite young to have lessened or eliminated his handicap? There is no blanket answer, but with special, early training, many retarded children, for example, *do learn* - to dress themselves, to eat acceptably, to play with toys, to wash their faces, etc. An Association for Retarded Children, or, in Malaysia,

The National Association for Remedial Education, work through specialists such as educators, psychologists, physicians, physical therapists, nutritionists, social workers, dentists, etc. to provide ways and means of helping retarded children to develop socially, physically and mentally to their fullest potential (Merck, 1977). This is the right of *every* child - handicapped and normal alike.

The child who cannot walk alone at three years of age may very well be greatly helped by orthopedic* surgery or therapy. Or, perhaps the child does not see well, has a disturbed sense of balance, a congenital deformity - but usually something can be done when the child is still young. By age 13, it may be too late (Bourne, 1971).

Loss of hearing in the young child could be due to conditions which could be corrected by surgery, medication or the wearing of an aid (Nelso, 1975; Tan, 1977).

"Don't worry! He will outgrow it!" is a red flag waving to say, "Yes, perhaps. But we must get more information from two or more different physicians on which to base our decision to 'wait' or 'act now'". Maybe the condition is such that the child will outgrow it, but we must do everything possible to not be lulled into false hopes for the future.

"This cannot happen to *my* child. I will not acknowledge the possibility. The child will outgrow it". Are you sure? Several years from now, when you *must* acknowledge it, may be too late. Do you want to bear the extra burden of guilt that would accompany such a realization? Your child is depending upon you. Your child is depending upon your using all the wisdom and courage you can muster. Be as sure as you can! (Stuart, 1960).

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COMMON CHILDHOOD COMMUNICABLE DISEASES AND THEIR PREVENTION

M.C.V. Idris

1. *Introduction*

Vital statistics indicate that since 1965, diseases of early infancy have been on the increase and remain as the leading cause of deaths in West Malaysia. Infant and toddler mortality rates have declined by as much as 56 and 71 percent between 1957 and 1975 respectively as a result of the various health care programmes including the Expanded Programme of Immunizations by the Malaysian Health Ministry. (Raja Ahmad Nordin and E.J. Martinez, 1977).

The efforts of the Health Ministry to combat diseases of nature through its programmes have been hindered by the inertia, prejudice and social attitudes of mankind. Health Minister Tan Sri Chong Hon Yan speaking at the opening of an intercountry workshop on primary health care between Malaysia and Korea in Kuala Lumpur in November 1978, said that rejection of the modern concepts of health care could be due to local prejudice, lack of health education and understanding. "Emphasis on health education and prevention is clearly needed," the Minister added.

The purpose of this paper, therefore, is to help parents, teachers would-be mothers identify and prevent the occurrence of common childhood communicable diseases.

II. Common Childhood Communicable Diseases

The ten most common childhood communicable diseases are:

1. Measles
2. Diphtheria
3. Whooping Cough (Pertussis)
4. Tetanus (Lockjaw)
5. Poliomyelitis
6. Tuberculosis
7. German Measles (Rubella)
8. Mumps
9. Smallpox
10. Chickenpox

1. Measles

Measles is listed by public health experts as the most serious of the childhood diseases and yet it is treated lightly by most people throughout the world. It is an acute highly communicable viral disease characterized by a rash, fever, and watering eyes and nose. It may cause brain injury and is often fatal. The virus is sometimes the direct cause of fatal pneumonia, but more often it is the precursor of a bacterial infection. Measles also has a tendency to attack the middle ear, which may lead to permanent deafness. The disease can also cause encephalitis or brain inflammation, with a high (10 percent) mortality rate and a higher rate of permanent damage. Most deaths occur among infants under three years of age.

Preventive Measures

Measles vaccine is most effective in preventing this disease. The immunization against measles will be included in the immunization programme by the Health Ministry as soon as the facilities for vaccine storage, transportation and its distribution are properly

established. (Raja Ahmad Nordin and E.J. Martinez, 1977).

In the United States of America, the measles vaccine is estimated to be about 90 percent effective, according to the Centre for Disease Control (CDC) in Atlanta, Georgia. Despite the high number of cases reported among American children who had been vaccinated, the CDC explained, "it does not necessarily suggest any problem with vaccine potency, inadequate immunological response or waning immunity". It appeared that one reason for the apparent vaccine failure was parental error, such as parents mistakenly reporting their children vaccinated when in fact they had not had shots. (Eugene Register-Guard, 1978).

2. *Diphtheria*

This is an acute infectious disease of the throat or nose. It is a dangerous disease, being highly toxic and often leads to complications of asphyxia* and cardiac damage.

Preventive Measures

The only effective control of diphtheria is through active immunization with diphtheria toxoid. All children should be immunized against diphtheria in infancy. A booster dose should be given before entrance to school.

3. *Whooping Cough (Pertussis)*

This is an acute bacterial disease involving the respiratory passages and symptoms include an irritating cough which gradually becomes paroxysmal*. Whooping cough accounts for a high mortality rate in children under two years of age.

Preventive Measures

Active immunization can be started at two or three months of age. A single booster dose of triple antigen is advised one year later and again before entering school.

4. *Tetanus (Lockjaw)*

This is an acute disease induced by toxin of the tetanus bacillus growing anaerobically at the site of an open wound. It is characterized by painful muscular contractions, primarily of the jaw and neck muscles.

Preventive Measures

Active immunization with tetanus toxoid gives solid protection. The initial inoculation is preferably given in infancy or early childhood, together with diphtheria toxoid and pertussis vaccine (DPT).

5. *Poliomyelitis*

This is an acute viral illness with a wide range of severity, from inapparent infection to nonparalytic and paralytic disease. Symptoms include fever, headache, gastrointestinal disturbance, malaise* and stiffness of neck and back, with or without paralysis.

Preventive Measures

Active immunity protects over 70 percent against the paralytic form with dead virus vaccine (Salk) and over 90 percent with oral live virus vaccine (Sabin). Boosters are recommended upon entrance to school. Life-time protection is anticipated with adequate immunization.

6. *Tuberculosis*

Tuberculosis is a chronic bacterial disease. Early tuberculosis is difficult to detect. Active disease may involve lungs, lymph nodes, bone, and other tissues. Children under the age of five are most susceptible and vulnerable--susceptible, because of intimate and perhaps repeated contact; vulnerable, as seen by the high mortality at this age.

Preventive Measures

- (a) BCG vaccination of uninfected (tuberculin-negative) persons induces tuberculin sensitivity in over 90 percent of individuals and confers good protection.
- (b) Periodic X-ray screening of tuberculin-positive populations.
- (c) Improvement of social conditions including nutrition, housing, and sanitation.

7. *German Measles (Rubella)*

This is a mild febrile*, infectious disease. Rash may be transitory and missed. It is a serious disease to contract during the first trimester of pregnancy since it has caused the development of many congenital abnormalities.

Preventive Measures

Vaccine for active immunity. Passive immunization with globulin to prevent or modify disease is moderately effective. Immunization is contra-indicated for female children before puberty.

8. *Mumps*

This is an acute febrile, viral disease characterized by swelling of the salivary glands. A possible complication of mumps is male sterility.

Preventive Measures

Active immunization is given after one year of age with a single dose of live attenuated virus vaccine. Immune serum globulin (human) has been used to protect contacts of mumps with good results.

9. *Smallpox*

This is a viral, systemic disease. It is sudden in onset with fever, severe headache and prostration and, later, a deep-seated rash. In the past, smallpox accounted for a high mortality rate throughout the world. According to the World Health Organization (WHO), this dreaded disease will soon, hopefully, be eradicated from the earth's surface.

Preventive Measures

Effective vaccination before exposure, prevents the disease. Immunity gradually wanes but virtually complete protection is afforded by revaccination with fully potent vaccine every three to five years. Vaccination is required within three years for international travelers under the provisions of the International Health Organization, WHO.

10. Chickenpox

This is an acute viral disease with mild fever, rash, and constitutional symptoms.

Preventive Measures

This is, unfortunately, the only childhood communicable disease where immunization is not possible. However, gamma globulin may be given with good results for the protection of contacts.

III. *Recommended Schedule for Immunization (Ministry of Health, 1972)*

The Malaysian Ministry of Health's recommended schedule for immunization as shown below provides a useful guide for parents and would-be mothers for the prevention of common childhood diseases.

<i>Age</i>	<i>Immunization</i>
1. Soon after birth	BCG
2. 2nd. month	Triple antigen (1st. dose) Oral polio vaccine (1st. dose)
3. 3rd. month	Triple antigen (2nd. dose) Oral polio vaccine (2nd. dose)
4. 4th. month	Triple antigen (3rd. dose) Oral polio vaccine (3rd. dose)
5. 5th. - 6th. month	Smallpox (primary vaccination)
6. 1½ - 2nd. year	Triple antigen (booster)

7. Primary School Entrants or 5th - 7th. year	BCG (if no BCG scar is seen or in cases of doubt) Smallpox (revaccina- tion) Double antigen (booster of Diphtheria & Tetanus toxoid) Oral polio vaccine (booster)
8. Primary School Leavers	BCG
9. Secondary School Leavers	Smallpox (revaccination) Tetanus toxoid.

Note:

1. In cases of complications following any single dose of triple antigen, Double antigen (Diphtheria and Tetanus toxoid) should be given.
2. For children over the age of 2 years, Double antigen (Diphtheria and Tetanus toxoid) should be given.
3. Other immunizations e.g. TAB (for typhoid) and cholera immunization will be given from time to time as the situation warrants. These immunizations should not be given to children below 6 months age.

IV. Summary and Conclusion

Childhood diseases account for a very high percentage of deaths in Malaysia. Immunizations on a routine basis are being implemented by the Health Ministry for five of the "six killers" of childhood diseases identified as diphtheria, whooping cough, tetanus, poliomyelitis, and tuberculosis. The exception being measles. According to the Ministry, as soon as the facilities for storage, transportation and distribution are properly established, immunization against measles will be included in the immunization program nationwide.

Immunization plays a vital role in the prevention of childhood diseases. The emphasis on health education and prevention will help parents believe that immunizations are necessary for their children right from birth until they leave secondary school. Parents have the tendency to forget the schedule of immunizations and at the same time some physicians may become lax about immunizations. Many physicians cannot handle the careful persistent follow-ups required to get reluctant youngsters back to the clinic for an entire series of injections. People don't worry about childhood diseases anymore because either they are not aware of the real dangers or they rely on modern medicine to cure all diseases. Such negative social attitudes through carelessness and lack of understanding must not be ignored for the sake of our children's health and well-being.

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OUR HOME: THE PLACE OUR CHILDREN GROW UP

Choa Kwok Kuan

Home for a young child should be a safe and comfortable place where he can grow and develop with as few hindrances as possible. Good natural lighting and adequate artificial illumination help to prevent accidents (especially at the stairs), to protect our health by minimizing eye strain and, also, to contribute to the attractiveness and cheerfulness of a home. Any home must be suitably ventilated for comfort. There should be low vents on the windward side for air to flow in and high vents on the opposite side for the stale air to flow out of the house.

The flooring of any home with children should be comfortable and safe as well as easy to maintain. Slippery floors are dangerous both to the mother carrying her child around as well as to little children running around.

A good environment for children includes a well maintained play space outside the home where children and parents can socialize and learn to live together with their neighbours. This is especially important in high rise, high density homes where even the living space is limited.

Not only are there general conditions for any home where our baby grows up, but there are also requirements specific to each stage of growth.

Home for the Infant Child

A young child in the home involves change. It starts with the preparation of the home for the infant. At this beginning stage, the absolute must is an environment in which you can control air and light. Baby is only interested in

comfort, not in colour and design. All he needs is a little basket to sleep in at the comfortable height for mother to change and diaper him, and maybe for sponge bathing him. A comfortable rocking chair is a great help to the mother while feeding the baby.

At three months of age, baby begins to feel cramped in his little basket. Around this time, he needs to be transferred to a crib where the sides can be raised and lowered. Soon, he can turn over and it is no longer safe to leave him on the bed or any high area without restraining sides. Baby, too, begins to take an interest in his environment. Colour and pictures begin to attract his attention. A few soft, washable, safe toys can be placed in his play space with maybe a mobile at the side which will move in the breeze and keep him interested. Soon, he can push himself backward or forward on his tummy and you may find him suddenly under a chair or a table if he is not in a playpen or an enclosed space.

Home of the Crawling Infant and Toddler

Once the baby is mobile, the danger of accidents must be recognized. Safety now plays a very important part in furnishing the home of the crawling baby. It has been pointed out that as babies become mobile, they have the mobility and gentility of a Sherman tank*. Added to this, anything he gets hold of goes into his mouth. Thus, the following modified checklist is good to follow for the home:

Safety Checklist (modified)

INDCORS

- Staircases** : Do they have safety gates where needed?
- Windows** : Are there window guards or rails for windows through which a child can fall?

- Electricity* : Can small children get at your electrical cords or trip over them? Do you have safety plugs in unused, exposed electrical outlets? Otherwise, these outlets should be hidden behind sofas, etc.
- Tabletops* : Do you keep them free of breakable objects or dangerous objects that a child might swallow? Do you keep low tables with sharp corners out of the center of the room where small children might fall against them? Do you keep lighters and matches out of reach?
- Rugs* : Are your rugs securely anchored so that your child will not slip on them when running? Are they placed in the often used traffic paths in the home?
- Shelves and bookcases* : Are they well anchored so they can't fall over on a child? (Remember, children love to climb bookcases).
- Kitchen* : Do you store all knives, forks and other sharp implements out of reach of small children? Do you remember to place sharp implements while in use, in the center of the table or counter where they cannot fall off on a child, or where the child cannot reach them when you are not looking? Do you remember, when cooking, always to turn the handles of pots away from the outside of the stove so that a child cannot grab them, and you will not knock them off accidentally? Do you remember to keep all poisonous cleaning supplies locked away out of reach of children? (A cupboard is not out of reach, if the child can open the door by himself!) Do you remember never to put anything into an empty soft drink bottle? Are all matches out of reach of children? Are plastic bags out of reach of children?
- Bathroom* : Do you remember to close all medicine and cosmetic containers tightly and keep them out children's reach? Locked medicine cabinets are highly recommended!

Closets : Are you careful to arrange the contents so that things don't fall out when you open the door? Are all objects on high closet shelves placed securely so they won't fall on anyone's head? Are you certain that there are no mothballs loose on closet floors or shelves? (They are poisonous and children have been known to mistake them for candy).

Furniture : Is the furniture stable with well rounded, if possible, protected corners? Are there glass tops which can be smashed by the child?

OUTDOORS

Toys : Are outdoor toys in good shape, e.g. chains holding swings not rusted through or ropes holding tires frayed, bolts holding seesaws firmly in place, etc.?

Garden : Do you have sharp metal guards around the flower garden that could cut a child if he fell on them? Do you have rusty or sharp pieces of machinery sitting around? Are there any boards with nails in the yard? Are small gardening tools put away?

Wells and Drains : Are wells securely covered? Are drain openings securely covered so a child can't lift the cover?

Garage and Pool : If you have a swimming pool, is it securely fenced and kept locked when there is no adult to supervise? Have you removed the door of an old refrigerator or freezer you may have stored in your garage?

Play forms a very important part of an evergrowing child's life. Most children do not have to be taught how to play. However, if the child is followed by a string of "No, no!" throughout the day because the home is unsafe to play,

this will surely restrict his imagination and, in turn, his development. Play is fun, but it also has the purpose of strengthening and exercising his body as he runs, walks, climbs, slides, crawls and jumps. Much play at this age is chiefly concerned with moving the body from place to place. Thus, instead of filling the home with many bulky pieces of furniture, it will be better to store most breakable things away, keep a few low comfortable chairs and allow the child sufficient space to pull his little cars and wagons, or to carry a doll or teddy bear around.

Home for the Preschooler

The preschooler is between the age of two and six. This is the age of the greatest growth, the greatest adventure. The child is more mobile and develops better coordination. His play is very active, highly dramatic and imaginative. He learns about living through his play. Colour, form and shape gradually has meaning for him. The child's play room should reflect the child, not his parents. It should be the room he or she dreams of, not the room his parents dreamed of. It should be a place where everything is for his size and his interests.

Primarily, in furnishing a child's room, it must be borne in mind that he is only a few feet tall. What the room looks like and how it functions below his waist is much more vital to a child than what is above the area his tiny hands can reach.

Secondly, this is a great learning period for both muscles and mind. Arranging for development of both is a function of decorating a room. Muscles are developed by grasping, running and jumping. Even putting things away on open shelves (that are the right height) is a way of coordinating hand muscles. Running little automobiles and trucks for hours over the floor, develops proper coordination. Toys, then are the great awakeners of the mind as well as ways of developing muscle groups. There should be plenty of room for the storage of toys.

The third point to keep in mind for this age group is that a child changes quickly within these years. Furnishings should be flexible and adaptable to his growth, and, if possible, should "grow" with the child. The table should be large with a hard surface that will take plenty of knocks. The legs should be replaceable with longer ones as the child shoots up in height. Chairs which are not too narrow can also "grow" with the child by replacing with longer legs.

At some time during this period, the child changes to a regular bed. The bed can be a low storage bed with rounded corners and wheels on one end so as to enable ease in shifting the bed. It can have a firm foam mattress covered with colourful bedsheets and a generous pull-out drawer for toys, pillows or pyjamas. It can also be pushed against the wall, draped with colourful upholstery fabric and small throw cushions to form a day-bed.

Generally, the wall should be bright and easily cleaned with a "learning" section made of cork or softboard that can adapt to a child's artwork or to pictures that will stimulate his interest. This "learning" section can be changed weekly or monthly. The wall will encourage his interest in different subjects.

Home for the School-Going Child

For the school going child, the days of "all play" are gone and part of his time has to be spent in a school. When he is at home, part of his home time has to be spent doing homework. Thus, an environment conducive to studying is gradually more and more important. For this, there has to be a desk (or table) and a chair in a pleasant, quiet place, and, if possible, away from the play area in the room. The chair itself should be comfortable for an upright position. The desk should provide proper writing surface and there should be sufficient no-glare light.

At some point between the ages of six and twelve, he will have overnight visitors and extra sleeping space will be required. If the room is very small,

it may be necessary to have a "bunk bed" or a mattress on top of a not too high cupboard can provide the extra bed.

Storage, too, becomes an increasing problem. Children need space for keeping "collections", games and growing wardrobes.

Change is the very basis of the home where our baby grows up! The needs are so different at each stage of growth that parents may have to modify their furnishings quite a bit to keep in line with their child's development.

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A LOOK AT PRESCHOOLS

Fauziah Halimah Rashid

Developing intellectual competence is a concern of education. To understand the process of learning, we must be aware of the nature of intelligence and the process of intellectual growth in children. Intelligence is now regarded as something acquired, that grows through nurture in the environment. It is not something that is totally inherited through the genes.

A child needs to be exposed to many materials in his environment, to expand his experiences so that he can develop his intellectual skills and competences to the maximum. Learning comes through play. It is aided by the guidance of informed teachers. Teachers must therefore be very careful in selecting a programme and the planning of the curriculum.

Play is the great avenue for learning in the nursery school. "The curiosity, inventiveness, and spontaneous energy of young children are sources from which a lifetime of learning and develop", comments the Educational Policies Commission of Malaysia.

Ethel B. Mediena says, "In the early formative years play is almost synonymous with life. It is second only to being nourished, protected and loved. It is a basic thing, of physical, social and emotional growth".

This is the concept of learning through play as adopted by many preschools.

The preschools is a place for activity. One group may be playing in the housekeeping corner, carrying on a wide a variety of homemaking activities. Another group may be building with blocks. A child may be working on sorting out a puzzle by himself. Another group may be playing a "matching game" under the guidance of a teacher. Another group may be outdoors with a teacher.

In an activity such as "Show and Tell", the child gets to show and share with the class the special thing the child has brought from home. For example, if he had brought a bird "What does the bird eat?". "How do you eat?". In this conversation they were thinking and figuring out. "We eat with our mouths. We have two lips. A bird eats, too, but a bird eats with a beak and that's very different". It establishes a meaningful relationship with ideas, with language, with an adult (the teacher).

Developing motor skills, skills in perception and language skills are an important part of the curriculum. They are necessary experiences in learning.

Motor Skills: Patterns of Response

A child builds self-confidence from control of his muscles. A child with good motor skills has more confidence as he plays with other children and copes with the situation.

Skills in using large muscles, develop through vigorous, active play. This play usually takes place outdoors. Some of the activities that develop large muscle skills are:

- climbing on a jungle gym, a tree or over a box;
- swinging on a swing, or on the rings of a bar;
- riding wheel toys;
- running barefoot on sand or grass;
- rhythmic activities to music.

Some of the activities that develop coordination in the use of small muscles are:

- activities in connection with dressing,
- (buttoning, lacing shoes etc.);

play with all kinds of manipulation toys like trucks,
cars, interlocking blocks, puzzles;
finger plays such as in "Ten Little Indian Boys";
using a paint brush or large crayons, felt pens;
cutting with scissors;
dancing and games such as balancing a bean bag;
proper size chair and tables promote good posture.

Part of teaching is making sure that children have a range of activities to develop coordination of large and small muscles.

Skills in Sensory Perception: Foundation for Concepts

The child learns about the world around him through the five senses (seeing, hearing, feeling, tasting, smelling) and through the kinesthetic* sense. The more materials he is exposed to, the more sharp would be his sensory perceptions.

Kinesthetic Sense

A child's kinesthetic sense comes through using his body, through knowing what it is like to lift a weight, roll down a slope or to throw something. Activities like jumping, climbing, reaching out and touching play a part in refining kinesthetic perception.

Smelling

There are many different kinds of smells - the smell of food or of flowers, the smell of plasticene or paint or soap, the smell of freshly washed clothes or when they are wet or even the smell of new shoes.

The teacher may help the child develop more awareness of odours by asking, "Do you smell something? What does it smell like? Where does it come from? Can you find it?"

Taste

The best place for children to learn taste discrimination is at the table when they have their snack. The children often comment on the difference in taste saying, "It tastes good" or "bad". But there are other ways to discriminate and the teacher can introduce them to "sweet" or "sour" taste. Things that look the same do not taste the same, such as sugar and salt, pineapple juice and lemon squash. Describing the taste not only increases the children's awareness, but it also challenges their ability to express their perceptions. Enjoying taste perceptions increases enjoyment in eating.

Hearing

Sounds are very important to children. Interest in sound and the capacity to listen, and to discriminate sounds contribute to the development of speech. Pleasure in sounds is the basis for the enjoyment of music.

The teacher can provide many experiences in sound for children and encourage their explorations of sounds. She can help them discover the differences in sound and speech. She helps them make different sounds - hitting two objects together, ringing a bell, making a musical sound by using a variety of instruments. She gives them opportunity to listen to music and to speech found in stories and poems.

Feel or Touch

Children are very responsive to the feel of things. They learn from touching and need a variety of experiences with touching in order to develop

adequate concepts about the world around them. They need help in making, describing and in using the correct descriptive words.

Objects feel hard or soft, rough or smooth, firm or spongy, for example, a "feel box" with different objects hidden in it gives the child a chance to try to identify objects by their feel.

The same objects feel different at different temperature as the handle bars of a tricycle in the sun or in the shade. Water feels different when it has turned to ice. The teacher helps to reinforce and extend the experiences by her comments or descriptive words. She may share the experience with him describing it without asking any response from him. Children learn by touching and feeling.

Seeing

The preschool child continues to learn by looking at, feeling and doing something with the objects around him.

Beauty in form and colour is important for a child, such as children's paintings hung on the classroom walls, a bowl of flowers etc.

Shapes and forms interest children. Blocks stacked according to shapes and sizes. Big and small, long and short, wide and narrow are terms to learn in relation to objects seen as well as felt. Experiments with shadow can show the child changes in shapes and sizes.

Languages and Literature

Language competence depends on a favorable environment.

The baby's first words mark a milestone in development as well as bring delight to parents.

Linguistic competence is achieved only by human beings. To be able to talk brings tremendous new possibilities for communication with others. The remarkable thing is that this complex development takes place under favorable conditions, without formal teaching. It comes from within the child in a nurturing environment.

Some children come from an environment that is not favourable for speech development. Their parents may talk very little to them, or refuse to answer their questions. Such children may find difficulty in developing fluency in speech unless they have an opportunity outside.

The teachers can appreciate how much children are influenced by the speech they hear when we listen to their telephone conversation carried on during play in the housekeeping corner in a preschool.

The preschool teacher talks with the children. She uses correct names for things and adds descriptive words, such as "Bring me the green book from the desk". She gives special attention to the use of pronunciation, pronouns and prepositions and the small words that often confuse a child. She must talk *with* the child, not *to* the child. She must remember not to talk down to the child.

She asks questions as well as answers them. Her questions may call for putting thought into words. "What do you think will happen? How do you make the aeroplane?"

The teacher and child converse when they are waiting, for some reason or when they are at the table eating. Children need to feel free to talk. The verbal child has a greater advantage over the less verbal child. We clarify our ideas when we express them. Young children who are constantly reproved for talking may end up avoiding expressing themselves verbally. It is advisable for us to say, "We'll talk later" rather than "keep still".

The child takes an important step in controlling his feelings when he can put them into words rather than by action only. For example, he can request what he wants instead of screaming or grabbing for it.

The teacher can help children find delight in the sounds, words and rhythm of language through poems and stories she selects. She reads to them often, slowly and with expression. She selects stories in which there is a repetition of choruses the children can join in. The danger, however, is to push them too hard. It should be a fun filled experience for all. A variety of well chosen books should always be easily available under conditions that will encourage their proper use. A cozy and comfortable reading area, completed with a few throw cushions should provide an attractive book corner. New books should be added now and then and the selection should be changed periodically.

It is important that books chosen should fit the interests of the child. For example, a child who liked cars was disinterested in books. One day he found a book on cars. He looked over it carefully and had the teacher read it to him. From then on, he carried the book around and sometimes tried to find someone to read it to him.

Mathematics

"As children play they handle objects and become aware of quantity. They store up impressions of amounts and relationship that are essential for later stages in understanding mathematical concepts" (Piaget). Children who can count do not necessarily understand the concepts of numbers. The child learns that he has two feet, two eyes, two hands, two legs. Learning to count helps him to form a tool for organising impressions about quantity. It is of value when it is related to a concrete experience. For example, there are more blocks than toy cars, more bikes and cars than see-saws and swings and it takes more water to fill a pool than the class aquarium.

With the guidance of an alert teacher the preschool affects many experiences that give the children a basis for understanding mathematical concepts.

Physical Science

Every teacher will help the child become aware of his physical world through his daily experiences. These simple, daily experiences include things like watching the rain fall, the rain evaporating in the sun and staying on the damp grass under the shade of the tree, etc.

A child tries to pull a heavy load in his wagon and the teacher says, "It is too heavy! It will be lighter if you take off the big block". Hence, he begins to be aware of what "heavy" means and something about weight and bulk.

Playing in water offers a host of opportunities for exploring. Some things float in it. Some things sink. Which things? Why? What happens to water poured on dry sand, on the sidewalk, in the garden? The teacher will help him frame questions and test out some answers.

Biological Science

Children are interested in all living things. They like to watch them grow and notice the changes.

Watching pets and caring for them gives children a chance to learn more about animals, how they eat, how they sleep, eliminate and reproduce. They can observe and discuss with the other children in the class. Children are curious about many things. Fish have to be fed only occasionally, while the rabbit and hamsters are hungry many times a day. Turtles move so slowly, but birds have to be caged because they move so fast and so far. These experiences make up a background for understanding.

Social Studies

Children live in a community and they want to understand it. In their everyday living, they see the various roles that each person plays as part of the family. The teacher can help by talking over questions of interest such as where daddies or mothers work. The teacher helps them by discussing the other people that make up a community, for example, firemen, policemen, postmen, news vendors, ice-cream men, bus drivers, taxi drivers, aeroplane pilots and many others. She has books and stories and pictures, and also tries to give them real life experiences by, for example, inviting the person in uniform to visit the pre-school.

Another aspect of the Social Studies curriculum is that of helping the children become acquainted with differences among people, of different nationalities. We have the Malaysian Malays, Malaysian Chinese, Malaysian Indians, Malaysian Eurasians and other Malaysian Europeans etc. Our ancestors came from many countries. Our children need to be aware of their heritage and feel pride in it. Accepting the differences and helping maintain the different cultural traditions is a way of strengthening the nation and the individuals in it. If every child feels that his differences are accepted, he can readily accept difference in others.

Music and Dance

Music offers another avenue of expression to children which is closely related to language. It is an avenue which is used by children internationally. The child's first experience of music is with his mother. Her tone of voice, her rhythmic rocking is all very important to a child's concept of music.

The tone of a human voice tells a great deal. The child in the pre-school will respond as much to the teacher's tone of voice as to the words she uses. The child will be reassured if the teacher speaks with confidence and reassurance.

Just as the child senses meanings through the tone of an adult voice, so we are alert to the varying tones of a child's voice. The high pitched voice, tight or abrupt speech of one child, the low, only half-articulated speech of another, the strong full tones of a third, tell us a great deal about each of these children. Our sharpness and sensitivity to these clues increases as we listen and observe them more often.

Singing and dancing must be looked upon more as a form of expression rather than a skill. The child would therefore, be encouraged to create his own songs, poem (prose) or ways of dancing.

All the above activities are aimed at nurturing the child so that he will develop to the best of his abilities physically, intellectually, spiritually and educationally.

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TELEVISION AND ITS EFFECTS ON CHILDREN

Hasnah Udin

Introduction

In the late sixties when television was first introduced in Malaysia, only the rich and the middle income people could afford to have television sets at home. Now, television has become a necessary household item in most homes. The low income people in the urban slums and in the rural areas place their priority in acquiring a TV set, be it electrically or battery operated, rather high in their budget. In some homes, there is more than one TV set. The latest trend is for families to possess coloured TV which was recently introduced and the price is still very high.

Television Programmes

TV programmes start from five o'clock in the evening till twelve at night from Mondays through Wednesdays. On Thursdays, Fridays, Saturdays and Sundays, the TV starts at three in the afternoon and ends past midnight. Most of the programmes shown are suitable for adults. Children's programmes are limited. The first children's programme shown was the Bugs Bunny Series. The films for the children's programmes come from England, United States, Germany and Japan. So the scenes shown are not local and the children are exposed to many unfamiliar things. So far there is only *one* programme showing local scenes to children. The educational TV programmes are shown only during schooldays from Monday to Friday. The programmes are related to school subjects such as Science, Mathematics and so on. How many children really benefit from these programmes is still a question to be answered as these programmes are shown at the time when most children are in schools. The morning school is not over till one in the afternoon and it will not be any earlier than two o'clock before the children are home. Children who go to afternoon schools are normally busy with

their school work in the morning and by eleven o'clock they would have left home for school. When is the time for them to see the ETV?

Exposure to TV

Children are interested in watching TV because the combination of sound, light and movements attract and hold their attention. Malaysian children are exposed to TV at a very early age. Very often we find mothers or baby sitters who carry out their daily household chores, like folding clothes and doing odd jobs, in front of the TV set. With them are the babies, so directly or indirectly these children are exposed to TV. Many children play or do their school work in front of the TV with the TV on. Television is a major activity for children especially the low income group where other forms of activities are limited. This is very true when families live in flats where play areas are very limited. Working mothers are too busy to attend to their children. They give excuses for allowing their children to watch TV. Some excuses are as follows:

- I can get my chores done when the children are watching TV
- TV keeps them out of trouble
- TV keeps them interested when they are alone indoors
- I know where they are and it is safe and peaceful.

These excuses are similar to findings of a research done in the United States (Hoffman, 1964).

Indirectly with these excuses, mothers encourage their children to watch TV. Is this a good thing if the programmes they watch are not suitable for children?

Effects of TV

Through my observation, TV is absorbing a substantial segment of time and concentrated attention of today's children. Is the time spent viewing TV

beneficial or otherwise? Is it good or bad for children? The answer is, in my opinion, both good and bad for it has both possible effects - potentially beneficial as well as potentially harmful.

Good Effects

Television is good for children if they see programmes that are suitable for them. It can act as an educational force for its "powerful influence can help shape our children's hopes, tastes and ambitions" (Breckenridge and Vincent, 1966). It can be considered to be a window of the world through which the child first perceives society and learns from repeated examples to cope with vicissitudes of living (Liebert and Neale, 1975). It entertains children. Children develop gay moods especially when they see comedy programmes. Such programmes instill a feeling of happiness and well being when they sit and see them. TV can be a strong positive stimulant in the intellectual growth of children for through viewing TV, it can broaden children's knowledge and interest. Certain TV programmes can help to hold their attention and indirectly train them to concentrate.

Through TV, children have a vast fund of experience and information. They see and learn things, people and places that they normally do not have the chance or the opportunity to see or to experience for example:

- to travel into space
- to see the living things in the deep sea
- to watch operations being done in hospitals
- to go fighting in deep jungle
- to see how people in other parts of the world live, and so on.

Children share the experience of the actors or actresses in the TV and enlarge vocabularies by listening to words spoken. Children may learn skills which they may never be able to learn in real life at such a young age.

Bad Effects

Programmes devoted to adventure and crime are especially attractive to children. Through watching fights on TV they learn techniques of aggression. An enormous amount of violence and aggression is shown in TV programmes. According to a study done by Universiti Sains Malaysia (New Straits Times, Dec. 22nd, 1978), TV Malaysia showed 57 killings, 365 guns, 196 gunshots and 350 body blows during a week in September this year. So our Malaysian children can be exposed to a lot of aggression and killings. How will these affect them? According to Lyle, (1961) films showing aggression have a strong effect upon children especially those who have deviant tendencies.

There are some good programmes shown by TV Malaysia that are suitable for children, for example:

- Big Blue Marble : It shows children around the world and how they live.
- Animals, Animals, Animals :
- New Mickey Mouse Club : This is a variety show for and by children.
- Little Vic : This is a story of a boy and the horse he looks after.
- Animal World .
- Circus Parade :
- Some cartoon shows : Such as Flintstones, Archie, etc.
- Rasa Sayang : Variety show for and by Malaysian children.

There are rising rates of juvenile delinquency due to viewing of crime programmes on TV (Hoffman, 1964). TV teaches techniques of crime to children and they may try out the techniques they see. Some years back there was a report

in newspapers of how a nine year old boy tried to strangle his younger brother by imitating the techniques used in TV.

If a child is continuously exposed to violence on television at a very tender age "he may believe that violence is normal and might even be right" (Utusan Konsumer Januari, 1979).

Scenes of violence and horror create tension in children especially those poorly adjusted or emotionally disturbed children. Children who are constantly under tension may develop an unhealthy personality. They develop nervousness, fear, anxiety and they may even have problems with bedwetting and nightmares. Other emotional reactions related to TV viewing are anger, defensive reactions, fatigue and hate. It may create bad moods in children especially if their heroes do not live up to their expectations.

TV may transmit pervasive beliefs that the world is a dangerous place to live in. They may adopt western cultures and values that may be in conflict with the oriental culture and values that their parents have. They may become TV addicts, especially in homes where parents do not interact frequently with their children.

Other bad effects of TV would be that it could blunt the children's sensitivity to and sympathy for human sufferings and distress if they watch a lot of tragedies. They may strain their eyes if they watch TV for too long or too near the TV set. Children may lose their sleeping time if they stay up at nights watching TV. TV viewing is taking children away from other beneficial activities like playing games with friends, reading, listening to stories or for that matter communicating with other members of the family. Children tend to hurry with their school work in order to see TV. If television is more important than schoolwork to them, then their school performance will be poor.

Television has produced an accelerated deterioration in eating practices. This is true when we observe food buying habits of children and the influence

they have on their mother's buying habits for foods. TV advertises a lot of food products for children and the appeal of advertisers to children could influence the children's eating habits. Parents are being pressured by their children to buy food products that have been advertised by TV. So manufacturers should remember that children are human beings - not targets of advertising.

Conclusion

Television has directly or indirectly influenced our children emotionally, mentally and socially. In many cases where playing time has been replaced by TV time, certain disciplines are needed so that our children will not become TV addicts. If the programmes are suitable for children, we should encourage them to see so that they will benefit from them. If they are not suitable, then discourage them from seeing to give them an alternative activity that is of interest to them.

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FACTORS INFLUENCING CONSUMER BEHAVIOUR OF CHILDREN

Halimah Hj. Ahmau

In the past, consumer behaviour research has been centered mainly on the adult population. This is quite understandable since adult consumers possess most of the consumer purchasing power. However, recently an increasing interest is shown by marketers and researchers towards studying yet another group of consumers - *our children*. They have realized that it would be a big mistake to disregard the influence of children in the market. More concern is now given in the development of product differentiation for children. They are also looking ahead to the development of future adult consumers - when these children and teenagers become important "acquisitive family builders of the future" (Markings, 1974). Why are they interested in children as consumers? Some of the reasons are fairly obvious. Firstly, they recognize the role of children in family influence. Although children as consumers do not possess the bulk of the purchasing power, children are a highly innovative group. They are also communicative and thus influential. They not only buy goods in their own interest but they also influence and condition the interests of their parents and other children. Children need not have their own money. To "want" is sufficient. In today's family value system, often, love, affection, caring and concern are demonstrated through giving money and material goods. Many parents believe that "ideal parent role" is characterized by a good deal of permissiveness, letting children have their way. It also means giving in to the child's demand, "I want" How often do we see this being demonstrated in the shops! A child pleads, and a parent gives in.

Secondly, their interest towards children as consumers comes from realization that habits, attitudes, motives - including the entire range of socio-psychological factors that are *inculcated* during childhood will affect their consumer behaviour as adults. Consumer behaviour does not develop suddenly with the

advent of adulthood. It is a product of learning which begins with childhood and continues to develop throughout the lifecycle. Therefore, understanding of children as consumers will help researchers understand adult consumer behaviour.

Studies have shown that several factors are influencing children in their consumer behaviour. Some of these factors are: the role of advertisements; socio-economic variables, such as age and sex; family lifestyles and social status; consumer education including parents, schools and mass media.

Influence of Television Advertisements on Children Consumer Behaviour

Hardly a day passes without us getting the impact of advertising in our lives. Seductive and clever advertising and salesmanship are constantly trying to brainwash us to consume what the manufacturers want us to, and not what we really need. Through their most persuasive techniques and within the intimacy of our homes, children, most of whom are avid television viewers remember cartoon characters, children of their age group or personalities that they recognize, persuading them to join the crowd - eat a certain brand of food or wear a certain brand of clothing, thus creating unnecessary "wants" among children.

Mc Neal (1969), in his study, examined the differences in consumer behaviour patterns of children of various age groups. Children were selected from age groups five, seven and nine. The same number of boys and girls were represented in each age group. The children in the study were found to spend as many hours watching television as they spent in school. Except for two - five year olds, all others indicated a keen awareness of television advertisements.

In response to the question of how much they favour TV advertisements, the answers showed increasing dislike and mistrust of television commercials with advances in age. Half of the five and seven year olds showed negative feelings towards TV advertisements, while in the nine year old age group, 75 per cent showed strong negative feelings towards advertisements. These children felt that

TV advertisements in general are annoying, untruthful and time consuming while those who expressed liking towards the advertisements felt that the advertisements were informative and entertaining (Mc Neal, 1969).

Although more than half of the children dislike TV advertisements, it was found that more than half of each age group bought or asked their parents to buy many of the goods that were advertised. Many gave the reasons that they were curious about those products advertised. They also felt that the goods were acceptable or good in quality. In general, it was discovered that lesser numbers of children in the older age group were impressed with the goods advertised, because they felt the qualities were highly exaggerated (Mc Neal, 1969).

Socio-Economic Influence

The kind of life style and the social class in which a child is born and raised are strong influences towards his consumer behaviour. Such forces as culture, values, resources and symbols will give a family certain patterned life style. These forces will affect the goods and services the family buy, and the way these goods and services are consumed. Children will learn through the purchasing and consumption habits of parents, and people living around them.

The concept of social class is not unrelated to life style. Families who belong to the same social class normally live within the same neighbourhood and have approximately the same income. However, they may have different life styles. One family may be highly consumption oriented. They "spend, go and consume", while another family may be more conservative and frugal in their spending. Both social class and life style are good indicators of consumer behaviour of children because social environments can influence the development of certain consumer attitudes and knowledge.

Moschis and Moore (1978) found in their study that children from low income homes are less knowledgeable about their consumer environment compared

to children of upper income homes. Children from upper income homes were found to exchange the experiences in their consumption with their peers more frequently than those from low income homes. Age was also found to be an important variable, affecting consumer skills and knowledge. Older children were more knowledgeable about differences in brands, price accuracy, legal knowledge and consumer role conceptions.

Types of material goods favoured by children were also found to be related to age (Mc Neal, 1969). At age five the significant goods favoured were sweets. At seven toys seemed to be more favoured. By age nine the desire for sweets showed a drastic decline and the desire for toys, clothing and other adult type goods increased significantly. The nine year olds were also found to be more fashion conscious and expressed the desire to acquire the articles which their friends had.

Consumer Education by Parents, School and Mass Media

Studies have also shown that the amount of consumer education provided to children either by parents, the school or the mass media have strong influences towards shaping healthy consumer behaviour of children. It is very important for today's society that the emphasis in educating children should not merely center around skills in production and income generating. Equal emphasis must be given towards teaching children consumer skills (Turner and Brandt, 1978).

We see people striving hard to increase their money income because society uses money, in most cases, as a yard stick by which one's worth or status is measured. The pressure to maintain their standard of living or even to excel others in monetary power, forces many people to migrate, to change jobs and often to take more than one job so as to increase their money income. But many people receive very little satisfaction from spending their hard earned income through lack of consumer skills. Consumers who are ineffective in the market place are termed as "minor" consumers. Sad to say, there are many "mature" people in terms of age who remain "minors" as consumers. How can these "minor" consumers teach

their children consumer skills if they themselves are lacking in such skills? (Gordon and Lee, 1972).

Parents should encourage children in independent purchasing as a way of teaching them consumer skills. Mc Neal (1969) gave five conclusions regarding independent purchasing among the children under study.

1. Independent purchasing becomes significant near age seven. This is the time when the child begins seeking independence in a number of his activities and begins to revolt against adult domination.
2. Parental permissiveness in children's independent consumer behaviour increases with increasing age. As the child gets older he is allowed to make more independent selection on shopping trips with parents.
3. There is an increasing desire among children to assume independent purchasing activities as they grow older. They not only try to assume more of the buying for their personal needs but also for family needs.
4. There is also a tendency towards increasing complexity in the independent purchases of children with increase in age. From simple purchases of candy bars to purchasing items like toys, school supplies and family supplies.

Parents could help encourage their children in independent selection and purchasing by providing them with personal allowance, giving advice before making a selection and involving children in decision making when buying for the home.

The school also plays an important role in educating children to be effective consumers in the market. Through the different courses in the school

curriculum children could be exposed to various consumer topics. Objectives in teaching consumer education in school should include:

- To develop awareness of children of their rights and responsibilities as consumers.
- To improve their ability to choose intelligently the goods and services available.
- To be a skillful buyer.
- To be able to manage money.
- To develop critical attitudes towards advertising and other promotional techniques.
- To familiarise children with sources of consumer information.
- To develop understanding and appreciation of the economic system of the country.

The above objectives could be achieved through incorporating consumer concepts and information in various subjects taught in the present school curriculum. Consumer education is inter-disciplinary in nature. Hence, each subject could handle some consumer topics. For example, in Basic Economics Course, the appreciation of the economic system of the country could be achieved. Home Science could teach the skills in purchasing foods and other household items. Critical evaluation of advertising techniques could be carried out in the language classes.

Chemistry classes could attempt to determine adulteration of food stuffs and others. These are only some examples of how consumer topics can be incorporated into existing courses. There is indeed a large scope of teaching consumer skills in schools. Currently, there is no organization or structure in teaching consumer education in schools. It is left to the interest and motivation of the individual teachers (Marimuthu, 1977).

The mass media also have a role to play in educating consumers. While children are exposed to TV advertisement, children programmes could help counteract the negative influences of the advertisements by creating consumer education advertisements geared towards children. For example, jingles and songs showing children enjoying fresh local fruits and vegetables instead of sweets. Cartoon characters could also be used on TV or newspapers to attract children and at the same time providing consumer information to them. Efforts have started in the mass media, namely, TV and newspapers, to educate consumers. Maybe more direction should be given towards the younger consumers so they will become educated, well informed mature consumers.

Studies on children as consumers are relatively new but researchers have realized the importance of this group. Consumer behaviour of children is only one of the many traits which is learned and will change with social setting, attitudes, knowledge and other factors. Understanding of consumer behaviour in children will help not only marketers but also parents, educators and the government. Consumer education should begin at home. Later, other social agencies including the mass media should play their roles in educating our children. Educating them today will prepare them to become effective Malaysian consumers tomorrow.

CHILDREN ARE THE FUTURE CONSUMERS OF MALAYSIA!

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MONEY MANAGEMENT EDUCATION FOR CHILDREN

Husna Sulaiman

Parents! How did you react when your two year old toddler stretched out a hand and demanded "Give me money! Give me money!" Did you feel proud of your baby's development, and in your happiness, picked the baby up in your arms request a kiss in return for a shiny silver coin? How often do you hand money to your preschooler for "being good today?" Were you worried at the frequent number of trips your five year old son or daughter made to the neighbourhood grocery store to buy sweets, groundnuts and ice-creams? As parents, you are happy to see the progress in your children's development, but at the same time, deep in your heart, you feel sad that at such an early age in life, your children have learned to view money as an important factor in their lives. You may shudder at the idea, but like it or not, you and your children are part and parcel of our money-oriented society today. Money is the resource, *the MEANS*, to achieve your goals - material as well as non-material goals in life. Thus, it is imperative for the family to guide their children in the use and attitude towards money. Parents should develop a family philosophy in the use of *money as resource, or means*, to attain value-based goals, and to inculcate such philosophy early in the children's life.

According to specialists working the area of child development, children acquire knowledge and attitudes toward money through a) observation of parents and other adults, b) participation in money transactions and c) training. "Modelling" or observation of parental behaviour and practices in handling family income occurs all the time in our daily living. It has become a very important source of money management education. On the other hand, conscious efforts by parents in providing opportunities for children to learn and participate in the money-goods transaction, as well as parental training in uses of money, are very much lacking.

Providing Opportunities in Use of Money

a) Children's Knowledge of Money

The first step in money education for children is to teach them the value and uses of money. Research shows that an average five year old preschooler is able to identify different sizes of coins as money. He may go a step further by naming five cent or ten cent coins. It is often noticed that a child of the same age, when given a choice between a coin and a dollar, picks up the latter in favour of a ten cent coin. But the ability to identify the different coins remains relatively meaningless until children learn their values, or know what different coins can buy (Hurlcok, 1978). On the other hand, a school age youngster of seven or eight years old has a better perception of the value of money than a preschooler because he has the opportunity to use 10 cent and 20 cent coins to buy snacks in the school canteen. Thus, money becomes more meaningful to children when they have opportunity to use it.

Research on Money and Children

Money management specialists working with American families in the '60' conducted research among children within the age of five to 12 years, and found evidence to support the following:

- a) If children are given wide experiences in the use of money, they will have more knowledge of money and its use than children lacking such varied experiences.
- b) Children will have more knowledge of money use if they are given money to spend.
- c) Children will have more knowledge of money if they save money.
- d) If children are given opportunities to earn money, they will have more knowledge of money use than children lacking this experience.

- e) Children will have more knowledge of and experience with money if their parents handle the family income wisely (i.e. follow practices recommended by money management specialists).

(Marshall et al, 1960)

From the findings, it is recommended that parents provide opportunity for children to learn the use and value of money by giving them money allowances to spend and save whenever possible.

Children's Participation in Money Management

Giving daily and weekly money allowances as practised by some Malaysian parents is inadequate in itself. There should be *other* learning experiences too, such as:

- 1) Teaching children the concept of decision-making and to bear consequences following any choice of action. This should be taught as early in the children's lives as possible. For instance, we often notice little girls and boys when accompanying parents to the grocery stores or supermarkets, would "demand" sweets and several other items at one time. Parents should take such an opportunity to teach the little ones concepts of "choice", "decision-making" and "limited resources" to "unlimited wants". A child should be firmly told that with 50 cents he owns, he could only get a bar of chocolate or one cone of ice-cream. He could have only one - the choice is his.

Similarly, an eight year old child getting a week's money allowance should be taught that a week's allowance of one dollar is to be spent for a period of five school days. The child goes without any money if he finishes the dollar within the first two days of the week. He has to face whatever consequence arise out of his chosen action (of course, parents should stock up his lunch box with enough food to eat during his "penniless" days!).

2) Depending on age and maturity, children should be encouraged to do "guided" independent shopping. According to research, nine year old shoppers prefer to make independent selections of items when accompanying their parents. With an increase in age, there is an ardent desire to shop independently. Parents should give guidance by giving suggestions, reasons and explanations if the child makes a poor choice of an item or of low quality. For teenage children who prefer independent purchasing trips with peer groups, it is parents' responsibility to keep close watch on the way they spend their allowances, that is, point out and explain the "foolishness" of certain expenditure or action, and the "wisdom" of others. Hurlock points out that children who are closely supervised by parents in their expenditures "begin to add new meanings to their developing concepts of money" (Hurlock, 1978).

3) Children should be encouraged to save and be exposed to the saving systems at home, at post offices and at commercial banks. The little ones who save coins in the "piggy banks" can be exposed to the post office and commercial bank saving systems by firstly, accompanying parents on such trips, and later, as they grow older, operate their own savings account at either one or both places. Early exposure to the saving systems helps develop the children's attitudes towards saving; and familiarity towards post office and banks will influence knowledge and behaviour in using other facilities offered by both institutions.

Parental Practices: Children's Source of Modelling

An important input of children's learning process is the observed behaviour and money management practices of parents. In other words, parents who handle family income wisely become a good source of reference or "modelling" to the children. It is presumed here that parents are involved in money management activities such as planning for short term and long term financial goals, keeping a family budget, recording money spent, etc. Money management specialists advocate that children should be involved in family financial planning. Such an involvement helps educate young family members, especially the teenagers, in the use

and management of money. Malaysian parents may protest such a recommendation and argue that children will unnecessarily get worried over family's financial problems. Some parents also fear that their children will talk about family monies outside the family circle. However, the above arguments are easily refuted. Parents can give their children a broad understanding of the family's situation without their knowing all details. They could be saved from getting more upset when they know that something is worrying their parents if the situation were explained in terms that they can understand.

The valuable experiences children get when they are included in discussions of family financial matters are as follows:

i) Exposure to Family Budgeting System

They become accustomed to budgeting, preparing and using shopping lists for grocery items, recording amounts incurred after every expenditure, helping trace and check for bills and receipts, and being actually involved in book-keeping, that is, helping mother to check her arithmetic etc. Such an exposure helps develop a favourable attitude towards the use of money.

ii) Awareness of the Planning Process and Goal Attainments of the Family

They learn that money has to be allocated for attainment of short and long term goals. If informed, they can understand why money is limited since a certain percentage of family income has to be saved for future education, another portion goes for payment of the monthly installment of the new house, etc. In a research on "Spending and saving patterns of adolescent siblings" (Phelan et al, 1969), it was found that "... plans for reaching saving goals and implementation of these plans appeared to be more important in developing favourable spending and saving patterns of adolescents". If American adolescents can benefit from such parental practice, the same can happen to their counterparts in Malaysia.

iii) Decision on Priorities

Children participating in family financial discussions will learn that spending for family basic needs have priority over other discretionary spending. For instance, money saved for buying a new blender is forgone in favour of immediate dental treatment of a younger member of the family.

iv) Conflict: Individual Versus Family Needs

Another valuable experience that children get from family financial discussion is developing the "give-and-take" attitude. This takes place when a conflict arises in needs of individuals and those of the group. A child's request for a new bicycle is to be weighed and considered against a family request for a weeks holiday in Pulau Langkawi. In such a situation, family discussion will evolve around family values and decision making. The child who was promised a bicycle may concede to the family request. Such an experience helps develop his personality.

Summary

Parents may get worried that their children become money-centered individuals. To overcome unfavourable developments in money use and undesirable attitudes toward money, it is strongly recommended that parents develop their own philosophy (based on desired values) on uses of money. This philosophy should guide parents in their money management practices. We know that children acquire knowledge and attitudes through observations, participation and training. Therefore, parents should utilise such developmental influences in giving them money management education. Several recommendations are presented for parents:

- 1) Provide opportunities for children to learn the value and uses of money.
- 2) Encourage them to participate in the marketing/money transaction activities by giving them money allowances. This will also train them in managing their own money.
- 3) Involve children in family money management discussions. Such an opportunity will directly train them to money management concepts and activities as practised by parents.

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DEATH FROM CLOTHING BURNS

Hamidah Ahmad

Burns associated with flammable fabrics take many lives each year. Burns that result from clothing catching fire are usually extensive and severe. For every burn that causes death there are many, many more who survive but are, unfortunately, permanently disfigured or scarred for life. Children are at higher risk of being most susceptible to injury from accidental burns of clothing than adults.

The main cause of burn accidents and almost all types of fire is due to carelessness.

CARELESSNESS in

- Allowing children to play with matches or lighters.
- Leaving children to play unsupervised around or near open fires.
- Throwing lighted cigarette butts or match sticks anywhere it is convenient.
- Allowing children to wear unsuitable, loosely constructed garments which can easily get into contact with any source of ignition.
- Allowing children to be near the fire during cooking either from gas or electric stove or any heating appliances.

Children do not realise the danger and when accidents happened they are unable to protect themselves. If their clothing should catch fire they are unable to react immediately or to seek assistance.

To save children and adults from any fatal accidents and to protect them from clothing burns the following factors have to be considered:

1. Fibre Contents of Fabric or Clothing

Below is a guideline showing fibre content of various fabrics with their flammability.

- | | | | |
|-------------------|---|---|--|
| Cotton |) | - | Fabrics in this group burn very readily and completely. |
| Linen |) | | |
| Rayon |) | | |
| | | - | Leave an afterglow, a continuous slow burning that can be as dangerous as the flame itself. |
| | | - | They are serious fire hazards to the wearer, unless treated with fire-retardant finishes. |
| Wool |) | - | Fabrics in this group do not ignite readily. They have a high flame resistance. |
| Silk |) | | |
| | | - | Fabrics burn slowly once in the flame and is self extinguishing when withdrawn from the flame. |
| | | - | Fabric is safest for use in children's nightwear. But clothing made from wool or silk is relatively expensive. |
| Acetate |) | - | They have very little flame resistance. |
| Triacetate |) | - | Light weight fabrics in this group ignite more readily and burn more rapidly than heavier weight fabrics producing a molten material than can cause a severe burn. |
| Synthetic fabrics |) | - | Fabric in this group include nylon, polyester, acrylic etc. They are popularly used to make children's dresses, nightwear and undergarments. |
| | | - | When in contact with a flame, this group of fabrics does not ignite readily but will melt and shrink away from the flame before burning. |

- drip molten polymer* is extremely hot and will adhere to the skin of anyone wearing a garment of this group, thus causing extensive and serious burns.

2. *Construction of a Fabric or Garment*

The construction of the fabric determines the degree to which oxygen is made available to the fibre.

- Sheer, open weave fabric burns more rapidly than a closely woven fabric.
- Light weight fabric burns faster than thick heavy fabrics.
- Brushed fabrics or those with a raised fuzzy surface burn with great speed and intensity.
- Loose fitting garments with large sleeves, flared skirts free edges or hems, unnecessary fancy trimmings are dangerous and will ignite more readily than close fitting garments or those with plain styles.

3. *Application of Fire Retardant Finishes*

The term Fire Retardant means "burn slowly". This is a chemical treatment given to fabrics whereby the danger of burning can be lessened. Fire retardant compounds either cut off the supply of oxygen to the fabric by forming a coating or by producing a non-combustible gas or chemically alter the fibre so that it forms a non-volatile* charred residue.

Durable fire retardants applied to some fabrics can normally last the life of the garment provided the garments are cleaned strictly according to instructions given by the manufacturer.

In the Event of Fire

If a child's clothing should catch fire:

- Do not allow the victim to run about as this will create a draught and encourage the flame to flare up and engulf the victim.

- Lie the child down and roll on the floor to prevent the flame from spreading.
- If a blanket or heavy towel is available, roll the victim in it to smother the flame.
- Call for a doctor.
- Place child in a tub of body temperature clean water, to stop pain and keep clean. *Do not* apply oils or salves!

What is Our Responsibility?

Each and everyone of us has to be aware of our responsibilities:

- Be alert to hazards of fire.
- Be aware that all textile fibre products will burn to a greater or lesser degree.
- Be cautious when near an open fire, or any heating appliances.
- Be wise to choose suitable, appropriate clothing for children with the thought in mind that they are most susceptible to injury from accidental ignition of clothing.
- Initiate the implementation of Labelling Act for textiles.

There should be greater efforts made to work for a reduction of deaths and injuries caused by flammable fabrics and related materials.

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GLOSSARY OF TERMS

- | | | |
|-----------------------------|---|---|
| angular stomatitis | - | cracking and inflammation of membranes of the mouth. |
| antenatal | - | the period of pregnancy before birth of the child. |
| asphyxia | - | suffocation due to lack of oxygen. |
| axons | - | the extension of a nerve cell, leading to the muscle. |
| caries | - | cavities and decayed areas of the teeth. |
| cariogenic | - | the quality of causing cavities and decay of teeth. |
| cholesterol | - | a fatty substance manufactured by animals and man, primarily in the liver. It is necessary for the further production of certain hormones. It is eaten when animal products are consumed (egg yolk, liver, fatty meat, etc.). |
| conjunctivitis | - | inflammation of the covering membrane of the eye ball. |
| dendrites | - | connections and extensions of a nerve cell which receive impulses and transmit them to the center of the nerve cell. |
| deoxyribonucleic acid (DNA) | - | genetic material of each cell. |
| depigmentation | - | loss of colour, usually the brown-tan of the skin. |
| epidemiological | - | adjective of epidemiology, the study of the occurrence and prevalence of disease, often applied to the study of the manner of spread of contagious diseases. |

febrile	- pertaining to a body temperature higher than normal, i.e. fever.
glycoproteins	- a chemical combination of carbohydrate and protein.
haemophilia	- congenital condition in which the blood does not coagulate normally.
hare lip - cleft lip	- a congenital deformity of the mouth.
histochemical	- a chemical and microscopic study of cells and organs. Adjective of histochemistry.
histological	- adjective of histology, the study of cells and organs by microscopic examination.
kinesthetic	- a sense mediated by nerves in muscles, tendons and joints stimulated by bodily movements and tensions.
kwashiorkor	- severe deficiency of protein, primarily, in infants and children.
linear growth	- growth increases steadily with age. If the information were plotted on a graph, it would form a straight line.
malaise	- a feeling of sickness.
marasmas	- severe deficiency of calories (starvation) in infants and children.
meningitis	- infection of the spinal cord.
metabolic	- adjective of metabolism, the chemical changes of food, water and gases in the living animal (Man).
microcephalic	- abnormally small head.
non-volatile	- the quality of not being able to be evaporated.
neurochromones	- genetic material in nerves.
oedema	- excessive accumulation of fluid in tissues, thus causing swelling.

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|--------------|--|
| orthopedics | - a branch of medicine concerned with disease and conditions of bones, muscles, tendons, joints, ligaments and cartilage. |
| paroxysmal | - adjective of paroxysm, a sudden sharp attack of pain - (coughing, urination, for example). |
| phospholipid | - a fatty substance containing phosphorus, such as lecithin and cephalin. |
| postnatal | - after birth. |
| prenatal | - before birth. |
| puromycin | - an antibiotic which interferes with protein formation. |
| Sherman tank | - a war vehicle which is difficult to stop. |
| spina bifida | - a birth defect in which there is an incomplete formation and fusion of the spinal canal. The spinal cord and nerves protrude through the back and appear beneath the skin. |
| toxemia | - a condition of the body resulting in abnormally high concentrations of toxic substances in the blood. |
| volatile | - a quality of a substance that allows it to evaporate. |